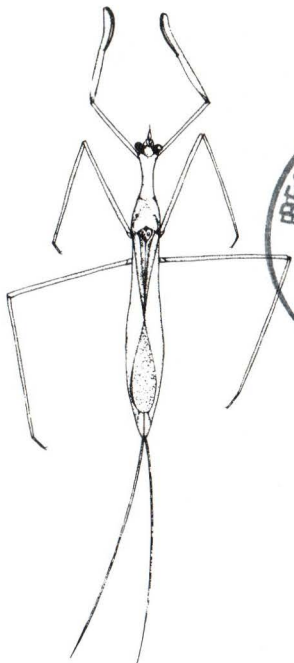

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March - mars, 1990

No. 1



BULLETIN



**ENTOMOLOGICAL SOCIETY OF CANADA
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA**

**ENTOMOLOGICAL SOCIETY OF CANADA
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA
BULLETIN**

VOL 22 (1) - March/mars, 1990

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EDITORIAL

Sex, Lies and Redtape

Recently several advertisements for various positions have appeared in the academic trade journals specifying that this or that position has been reserved for a woman or that only women will be hired until a certain equality in sexual* statistics has been achieved. At risk of being branded an insensitive bigot, I completely reject inclusion of these sorts of statements as inappropriately discriminatory and wrong.

First, to deal with the notion of discrimination - a word that has an undeservedly bad reputation. Every time a hiring decision is made discrimination has occurred - against everyone who applied but didn't succeed. Such is the job of hiring committees or individuals and it will ever be such.

The question that needs work revolves around the bases for such discriminations. Which are appropriate and which are inappropriate? To me, the only reasonable basis on which to hire a scientist for any position is the ability of the applicant to do the job in question better than any other applicant. This may seem like a self-evident statement but it is at the very heart of the issue addressed by those who would enforce artificial quotas. Such quotas say "Given that this person has the qualifications to do a particular job, their sex/race/religion etc. should be the next criterion under consideration in an effort to redress a perceived statistical imbalance." To me, the content of such statements has two effects - it keeps social activists happy and promotes flower growth.

This filling-a-quota response ignores several of the realities in hiring. The most salient of these is that, at least for any hiring in which I've been involved, all applicants are 'qualified' for the job. Qualification per se is not the question - quality is. Quality is not simply a matter of who has the most papers or has won the most awards. The tone of a person's interview, the ease with which a person could fit into the research program and aims of a department, the quality of their reference letters, etc., all play a role.

A second concern is that, when involved in a hiring, I'm most emphatically not trying to right some social wrong. I'm trying to make a judgement on a colleague that I can deal with productively in a spirit of collegiality, cooperation and mutual respect over a number of years. I frankly don't care what particular forms of human genetic variance that 'best' person happens to exhibit.

A final problem I see with hiring on artificial grounds is the stigma attached to any candidate hired under such a system. There is a pervasive feeling, right or wrong, that the job has not been earned but simply granted on bases that have nothing to do with the ability to perform the job in question. Working as a scientist is difficult enough without anyone having to fight such a stigma.

If jobs are awarded on criteria that have nothing to do with candidate quality, then science and scientific effort suffer. They suffer because the essential criterion - the quality of the scientist - has been subsumed to a bureaucratic vision of the best way to solve social inequality. My own department just granted a tenure-track position to a woman for the first time in its history. Several will view this as a step forward in women's rights. Several will consider it good that female biology students at Mount Allison University will now have a female role-model. Several will say that one permanent faculty member in eight being female still does not represent a large enough step in hiring female professors. All of these statements are probably true and accurate. The most important aspect of it all to me is that, next door, there is a good scientist, good teacher and good colleague. All else is secondary.

Ron Aiken,
Mount Allison University

* In this editorial, I eschew the use of the word 'gender'. Words have gender, people don't.

SOCIETY BUSINESS/AFFAIRES DE LA SOCIÉTÉ

President's Update

The Entomological Society of Canada officially applied for membership in the Canadian Federation of Biological Societies in December, 1989. I have been invited to attend the CFBS Board meeting on 18 February, 1990 when our application, together with those of other former member Societies of the Biological Council of Canada, will be considered. At this time I will have the opportunity to speak to our application and answer any questions the CFBS Board members may have. To be accepted the application must receive a majority vote of the CFBS Board members present.

1989 was the centennial year for the Entomological Society of America, an event celebrated at the opening ceremonies of their annual meeting held at San Antonio in December. On behalf of the ESC I presented Dr. Dorothy Feir, President of the ESA, an ironwood gavel and sugar maple striking block to mark the occasion. These were made, at the request of the ESC governing board, by Mr. G. Dunphy of Taymouth.

The brevity of the present update, covering those events occurring since the last Bulletin appeared, should not be interpreted as a lack of activity within the Society. The different Committees are actively pursuing their objectives and submit interim reports for the spring Executive meeting on 17-18 April. A resume of progress made will be included in the June *Bulletin* update.

Jeremy McNeil

Mise à jour présidentielle

La société d'entomologie du Canada a officiellement fait une demande d'adhésion à la Fédération canadienne des sociétés biologiques en décembre, 1989. J'ai été invité à assister à la réunion du comité de direction le 18 février, 1990 alors que notre demande, ainsi que celles des anciens membres du Conseil biologique du Canada, seront évaluées. J'aurai à ce moment l'occasion de discuter de notre demande et de répondre aux questions des membres de la FCSB au besoin. Pour que notre demande soit acceptée, il est nécessaire qu'elle reçoive le consentement de la majorité des membres du conseil de la FCSB présents à cette réunion.

1989 était l'année centenaire de la Société entomologique des Etats-Unis, un événement qui a été célébré lors des cérémonies d'ouverture du congrès annuel tenu à San Antonio en décembre dernier. Au nom de la SEC, j'ai offert au Dr. Dorothy Feir, présidente de la SEA, un marteau en bois franc et un bloc de frappe en érable pour souligner cette occasion. Ces objets ont été fabriqués par Mon. G. Dunphy de Taymouth, à la demande du bureau de direction de la SEC.

Cette courte mise à jour, couvrant les événements qui se sont déroulés depuis la parution du dernier bulletin, ne devrait pas être interprétée comme étant un manque d'activité de notre Société. Les différents comités poursuivent toujours leurs objectifs et chacun soumettra leur rapport intérimaire à l'exécutif au cours de leur réunion le 17-18 avril prochain. Un résumé de leurs activités sera alors inclus dans la mise à jour du *Bulletin* de Juin.

Jeremy McNeil

Meeting Notices

40th Annual Meetings

The Annual General Meeting of the Entomological Society of Canada will be held in Banff, Alberta on October 9, 1990.

The annual meeting of the Governing Board will be held at The Banff Centre from 0900 to 1700 h on October 6, 1990 and from 0900 to 1400 on October 7, 1990.

Matters for consideration for either meeting should be sent to the Secretary, Dr. R.J. West, Newfoundland Forestry Centre, P.O. Box 6028, St. John's, Nfld. A1C 5X8 FAX 709-772-2576

Executive Council Meeting

The midterm meeting of the Executive Council will be held on April 17 - 18, 1990 at the Embassy West Motor Hotel, 1400 Carling Avenue, Ottawa. Matters for consideration for this meeting should be sent to the Secretary, Dr. R.J. West, Newfoundland Forestry Centre, P.O. Box 6028, St. John's, Nfld. A1C 5X8 FAX 709-772-2576

Nominations

The list of nominees for executive offices in the Entomological Society of Canada and for the Fellowship Committee as received by 1 February 1990 from the Nominating Committee by the Secretary is as follows:

Second Vice-President:

Dr. P.W. Riegert

Dr. I.M. Smith

Director-at-Large:

Dr. G. Boivin

Dr. Y. Mauffette

Dr. K.W. Richards

Fellowship Committee

Dr. S.C. Jay, FESC

Dr. E.E. Linquist, FESC

Dr. L. Safranyik, FESC

Additional nominations must be signed by three members in good standing and received by **30 April 1990** by the Secretary, Dr. R.J. West, Newfoundland Forestry Centre, P.O. Box 6028, St. John's, Nfld. A1C 5X8 FAX 709-772-2576.

Committees and Representatives/Comités et Représentants

Update/Mis à jour

Continuing Committees/Comités permanents

Endangered Species/Espèces menacées

S. Cannings, Vancouver (ESBC)
A.W. Thomas, Fredericton (AES)
W.B. Preston, Winnipeg (ESM)
H. Goulet (ESO)

Insect Common Names and Cultures/Noms communs d'Insectes et Élevages

E.M. Belton, Chair, Burnaby (ESBC)
K. Moore, Saskatoon (ESS)
A.G. Robinson, Winnipeg (ESM)
D. Finnamore, Fredericton (AES)
P. Syme, Sault Ste. Marie (ESO)

Membership/Adhésion

B. Roitberg, Chair, Burnaby (604-291-3585)
R. Alfero, (ESBC)
P. Riegert, Regina (ESS)
G.H. Gerber, Winnipeg (ESM)
Y. Pelletier, Fredericton (AES)
J. Turgeon, Sault Ste. Marie (ESO)

Scholarships/Bourses d'étude

L. Safranyk, Victoria(ESBC)
B. Chapco, Regina (ESS)
J. Conroy, Winnipeg (ESM)
W. Seabrook, Fredericton (AES)
J. Cunningham, Sault Ste. Marie (ESO)

Student Affairs/Affaires des étudiants

M. Winston, Burnaby (ESBC)

Ad Hoc Committees/Comités Ad Hoc

Insect Transmission of Plant Diseases/ Transmission des Maladies des Plantes par les Insectes

Conrad Cloutier, Québec
Mark Sears, Guelph

Minutes

Governing Board Meeting

Radisson Plaza Hotel,
St. John's, Newfoundland

September 30 and October 1, 1989

The meeting was called to order at 0900 hrs on September 30, 1989 by President D.C. Eidt, Those present were D.C. Eidt, President; J.N. McNeil, First Vice-President; J. E. Laing, Second Vice-President; E.C. Becker, Past-President; D.E. Bright, Treasurer; G.H. Gerber, N. Angerilli, B. Roitberg, I.M. Smith, N.J. Holliday, Directors-at-Large; R.P. Jaques (ESO), C. Vincent (SEQ), D. Larson (AES), R. Roughley (ESM), J. Doane (ESS), J.R. Spence (ESA), I.S. Otvos (ESBC), Directors from Affiliate Societies; A.B. Ewen, Scientific Editor; R.B. Aiken, Bulletin Editor; J.A. Shemanchuk, Secretary; D. Quiring, L.A. Gilkeson, R. Ring and R. West, observers.

1. Notice of Meeting

The notices of this meeting were mailed September 1, 1989. A notice was published in the March, 1989 issue (Vol. 21) of the *Bulletin*.

2. Additions to the Agenda and Approval of the Agenda

The agenda was amended as follows:

1. change 9.2.26 AASC and COPSE to 9.2.25
2. add 9.2.26 CAWPRC
3. add 9.2.27 Regional Directors Reports
4. add 9.2.7.1 1990 Annual Meeting Report
5. add 10.4 Office Communications

J.N. McNeil moved and J.R. Spence seconded that the agenda as amended be accepted.

Carried

No action required

3. Proxies and Absences

3.1. Proxies

R. Roughley for M. Galloway

3.2. Absences

J.E. Hollebone

4. Minutes of Governing Board Meeting, July 2-3, 1988

G. H. Gerber moved and I.M. Otvos seconded that the minutes as circulated and printed in the December, 1988 (20:4) issue of the *Bulletin* be accepted.

Carried

No action required

5. Minutes of the 38th Annual General Meeting, July 6, 1988

E. C. Becker moved and J.N. McNeil seconded that the minutes as circulated and printed in

the December, 1988 (20:4) issue of the *Bulletin* be accepted.

Carried

No action required

6. Minutes of Governing Board Meeting, July 8, 1988

N.J. Holliday moved and R. Roughley seconded that the minutes as circulated and printed in the December, 1988 (20:4) issue of the *Bulletin* be accepted.

Carried

No action required

7. Minutes of the Interim Executive Council Meeting, April, 1989

E. C. Becker moved and J.N. McNeil seconded that these minutes be received.

Carried

No action required

8. Business Arising from Previous Minutes

8.1. Custody of Charter, By-Laws, Rules and Regulations

J.A. Shemanchuk reported that the Charter and the By-laws were submitted to C. Vincent for translation into French and when completed copies will be filed at the central office. Updating of the Rules and Regulations is in progress and when completed, they will be forwarded for translation and custody at the central office.

Action: Secretary

8.2. Computer Record of Charter, By-laws, Rules and Regulations

J.A. Shemanchuk reported that action is pending on the revision and translation of the documents before these can be recorded on computer.

Action: Secretary

8.3. Disposal of Back Files of Secretary

J.A. Shemanchuk reported that routine letters and mail documents were destroyed. Minutes of meetings that were older than 3 years were turned over to the Heritage Committee.

No action required

8.4. NSERC Scientific Publications Grant

D.E. Bright reported that a grant proposal was submitted requesting a grant of \$15,000 per year for the next three years.

No action required

8.5. Public Awareness

D.J. Larson reported that he contacted various media. CBC radio and TV will be present on the first day of the meeting and he will arrange interviews.

No action required

8.7. Husband-Wife Membership Category

This item of business was deferred to 9.2.3., Finance Committee Report, for discussion.

No action required

8.8. Biological Survey

D.E. Bright reported that the contract is in effect and no action is required at this time. He further reported that there are costs associated with the administration of the contract and he recommended that a reasonable amount be included in future contracts to cover these costs. He also recommended that the Treasurer be involved in drafting future contracts.

J.N. McNeil moved and G.H. Gerber seconded that a letter be written by the Treasurer and the Finance Committee to H. Danks expressing this concern.

Carried

Action: Treasurer and Finance Committee

8.9. 959 Merivale Road Property

D.E. Bright reported that the property has been sold and a small loss was incurred.

I.S. Smith moved and I.M. Otvos seconded that the incoming President is instructed to appoint a committee to assess future options to accommodate the offices of the Entomological Society of Canada.

Carried

Action: J.N. McNeil

8.10. Installation of Telephone Modem

This item of business was deferred to item 10.4, Office Communications, for discussion.

No action required

8.11. Page-Charge Waiver Forms and Information

J.A. Shemanchuk reported that he instructed the Publications Committee on this matter via the minutes of the Executive Council Meeting, April 23-24, 1989.

No action required

8.12. Notice of Publication of *Memoirs*

J.A. Shemanchuk reported that the Managing Editor was contacted by telephone and via the minutes of the Executive Council Meeting, April 23-24, 1989.

No action required

8.13. Science Policy Committee

This item of business was deferred to item 9.2.9, Science Policy Committee, for discussion.

No action required

8.14. Science Fair Prize

The Governing Board decided (by mail ballot (12-2)) not to join the Youth Science Foundation and not to award a Science Fair Prize, because there is a requirement that any society must be a member of the Foundation for three years before a prize could be accepted.

No action required

8.15. Membership Campaign

This item of business was deferred to item 9.2.13, Membership Committee, for discussion.

No action required

8.16. Report of the Achievement Award Committee to the Board

J.A. Shemanchuk reported that the statements in the rules and guidelines were clarified.

No action required

8.17. Graduate Research-Travel Grants

D.E. Bright reported that the presentation of the first Graduate Research-Travel Grant was made to Ms. Fiona Hunter by Dr. Jim Sutcliffe on behalf of the President.

No action required

8.18. Budget for Publishing Diseases and Insects of Vegetables

D.E. Bright reported that \$5000 was budgeted for 1990 towards the publication of the book on Diseases and Insects of Vegetables.

No action required

8.19. Expenses for R.S. Vernon

J.R. Spence moved and J.E. Laing seconded that the recommendation from the Executive Council to pay the equivalent of Apex airfare and lodging and meals for Saturday and Sunday, September 30 and October 1, 1989 for R.S. Vernon be ratified.

Carried

No action required

8.20. Endangered Insect Species

D.E. Bright reported that there was no direct action taken on this report and, because of events, no further action is required.

No action required

8.21. Secretary Search Committee

A committee consisting of J.E. Laing, Chairman, D.C. Eidt, E.C. Becker and J.N. McNeil was set up and a report will be brought in under item 9.2.25.5 of these minutes.

No action required

8.22. Greetings to the Entomological Society of America

D. C. Eidt described the gavel that will be presented to the Entomological Society of America on their centennial. President J.N. McNeil will present the gavel to the Entomological Society of America at their Annual Meeting.

No action required

8.23. Gift Subscriptions

G.H. Gerber reported that the recommendation from the Executive Council was adapted to the By-laws, Rules and Regulations and that the necessary changes were made to the Standing Rules.

No action required

8.24. Systematics Workshop

I.M. Smith reported that the brief on the Systematics Workshop is not complete. Further discussion of this item of business was deferred to item 9.2.9, Science Policy Committee, of these minutes for discussion.

No action required

8.25. Job Description for Clerk

D.E. Bright reported that a job description for the clerk position is being prepared and will be ready for the Executive Council Meeting in April, 1990.

No action required

9. New Business

9.1. Correspondence

J.A. Shemanchuk read three items of correspondence as information to the Governing Board.

No action required

9.2. Reports from Officers, Trustees Representatives and Committees

9.2.1. Executive Council

D.C. Eidt presented a verbal report. A more detailed report will be published in the *Bulletin*.

No action required

9.2.2. Treasurer

The Treasurer reported that the Entomological Society of Canada finished 1988 in a healthy financial position. The prospect for 1989 is favourable.

No action required

9.2.3. Finance Committee

9.2.3.1. Translation of Abstracts

This item was deferred to item 9.2.22.1 of these minutes for discussion.

No action required

9.2.3.2. Cost of Publishing Collector Works and Symposia as *Memoirs*

E.C. Becker moved and G.H. Gerber seconded that the Entomological Society of Canada adopt the policy of recovering the costs of publishing collected works and symposia as *Memoirs* by applying a surcharge to be borne equally by all authors.

Defeated

No action required

Moved by N.J. Holliday and seconded by J.N. McNeil that the overhead associated with publishing symposium proceedings and similar collected works as *Memoirs* be borne by the Entomological Society of Canada.

Carried

No action required

9.2.3.3. Spousal Membership Category

The Governing Board rejected the recommendation for a Spousal Membership Category, while noting that the Gift Subscription program solved the problem of two sets of journals in one family.

No action required

9.2.3.4. Classification Level of Clerical Position

N.J. Holliday moved and J.N. McNeil seconded that the Executive name a task force to review the duties of the clerical position in the Entomological Society of Canada office during 1990 and ensure that the classification level and salary are appropriate.

Carried

Action: J.N. McNeil

9.2.3.5. Honoraria Paid to Trustees

J.R. Spence moved and J.E. Laing seconded that the Entomological Society of Canada increase the grants paid in lieu of expenses by 25% to account for inflation since the last adjustments were made.

Carried

Action: Treasurer

9.2.3.6. Mechanism for Increasing Income

J.N. McNeil moved and I.S. Otvos seconded that the Entomological Society of Canada promote sustaining membership more actively and establish a committee to study the merits of advertising in the *Bulletin*.

Carried

Action: J.N. McNeil

9.2.4. Scientific Editor

9.2.4.1. Change to Instructions to Authors

The Governing Board agreed to add "Authors are urged to deposit voucher specimens, documenting the identity of the organisms studied, in recognized institutions and to note these repositories in their papers" to the Instructions to Authors.

Action: Scientific Editor and Publications Committee

9.2.4.2. Personal Communications Citation

The Governing Board agreed that the following change "Authors should ensure that they have permission to quote 'personal communication'" to read "Letters of permission to use data must be provided for any 'personal communications' cited by authors"

Action: Scientific Editor and Publications Committee

9.2.5. Publications Committee

9.2.5.1. Publication of *The Canadian Entomologist*

J.R. Spence moved and J.N. McNeil seconded that recommendation #1 of the Publications Committee which reads "that *The Canadian Entomologist* be published every 2 months rather than monthly", thus providing more flexibility in case of unexpected events and saving a useful amount of money be adopted.

Carried (8 for, 4 against)

Action: Managing Editor

9.2.5.2. Review of Bimonthly Publication

I.S. Otvos moved and B. Roitberg seconded that the Publications Committee after one year review the consequences of publishing *The Canadian Entomologist* bimonthly and report to

the 1991 Executive Council Meeting.

Carried

Action: Publications Committee

9.2.5.3. Page Waivers Information

The recommendations from the Publications Committee that authors be informed on how page-charge waivers are reached fall within the jurisdiction of the Committee and are now being made.

No action required

9.2.5.4. Page Waivers for *Memoirs*

J.R. Spence moved and J.E. Laing seconded that no more than 50 pages or 4%, whichever is least, of a volume of the *Memoirs* be allocated to pages with page charge waivers.

Carried

Action: Publications Committee

9.2.5.5. Copyright Registration of *The Canadian Entomologist*

The Governing Board took no action on the recommendation to proceed with copyright registration of *The Canadian Entomologist* and the *Memoirs*..

9.2.6. Bulletin Editor

The report from the Bulletin Editor was accepted.

No action required

9.2.7. Annual Meeting

9.2.7.1. Annual Meeting at St. John's

D.J. Larson reported that the Annual Meeting is going on schedule and in the usual format. He expressed some concern that registration may be low. A student paper competition is being held. He suggested that contributions from the Entomological Society of Canada towards meeting Annual Meeting expenses needs review.

No action required

9.2.7.2. Annual Meeting 1990

J.R. Spence reported on the Annual Meeting to be held in Banff in 1990. The tentative schedule is: October 6-7, Governing Board Meeting; October 7, Opening Ceremonies; October 8-10; Scientific Sessions; October 9, Annual General Meeting; October 10, Governing Board Meeting.

No action required

9.2.7.3. Annual Meeting 1991

C. Vincent reported that plans for the 1991 Annual Meeting are progressing well. The meeting will be held in Montreal on October 21-23, 1991. Three symposia are being considered along with visits to the Montreal Insectarium. The Governing Board approved the dates of the meeting.

No action required

9.2.8. B.C.C.

No report was received. D.C. Eidt reported that B.C.C. as an organization will cease to exist by December 31, 1989 and all outstanding business completed by June 1990. E.C. Becker was asked to attend the meeting on the status of Management of Federal Research Scientists.

Action: E.C. Becker

9.2.9. Science Policy Committee

The report from the Science Policy Committee was accepted. The Pesticide Policy Committee was asked to change its name to Pest Management Policy Committee to provide a broader scope. Dr. G. Boiteau accepted the Chair of the new Committee on Insect Transmission of Plant Diseases.

No action required

9.2.10. Public Education Committee

The report from the Public Education Committee was accepted.

No action required

9.2.11. Scientific Committee Biological Committee

G.E. Ball reported that the Biological Survey is alive and well. A report was not submitted to the Governing Board because a report is submitted annually to the President.

No action required

9.2.12. By-laws, Rules and Regulations Committee

9.2.12.1. Standing Rules and Guidelines on Bilingualism

G.H. Gerber moved and J.N. McNeil seconded that the Standing Rules and Committee Guidelines on Bilingualism be accepted.

Carried

No action required

9.2.12.2. Student Paper Competition

G.H. Gerber moved and E.C. Becker seconded that the Standing Rules and Committee Guidelines on the Student Paper Competition be accepted.

Carried

No action required

9.2.12.3. Student Paper Competition Guidelines Amendment

J.N. McNeil moved and N.J. Holliday seconded that Item 16 (III) of the Committee Guidelines and Item IX 5 (III) of the Standing Rules be changed from "The student must be the principal investigator and author of the paper" to "The student must be the principal investigator and sole author of the paper".

Carried

Action: Secretary

9.2.12.4. Research-Travel Grants

G.H. Gerber moved and I.S. Otvos seconded that the Standing Rules and Committee Guidelines for the Research-Travel Grants be accepted.

Carried

No action required

9.2.13. Membership Committee

The Governing Board accepted the Membership Committee report. A membership campaign will be launched after results for CFBS are received.

No action required

9.2.14. Fellowship Selection Committee

The Governing Board accepted the Fellowship Selection Committee report. Nominees for Fellows were not solicited in 1989 because of quota restrictions.

No action required

9.2.15. Nominations Committee

The Nominations Committee submitted the following nominations:

Second Vice-President:

R. Ring, Victoria, B.C.

A. Tomlin, London, Ont.

Director-at-Large:

L.A. Gilkeson, Sidney, B.C.

D. Quiring, Fredericton, N.B.

J.M. Sutcliffe, Peterborough, Ont.

Fellowship Committee:

A.R. Forbes, Vancouver, B.C.

V.R. Vickery, Ste-Anne-de-Bellevue, Qué.

Honorary Member:

T. Finlayson, Vancouver, B.C.

No action required

9.2.16. Elections Committee

Successful candidates were:

Second Vice-President:

R. Ring, Victoria, B.C.

Director-at-Large:

L.A. Gilkeson, Sidney, B.C.

D. Quiring, Fredericton, N.B.

Fellowship Committee:

A.R. Forbes, Vancouver, B.C.

V.R. Vickery, Ste-Anne-de-Bellevue, Qué.

Honorary Member:

T. Finlayson, Vancouver, B.C.

Referendum C.F.B.S.

Yes - 188 No - 109

No action required

9.2.17. Achievement Awards Committee

9.2.17.1. Gold Medal

Dr. J.P.M. Mackauer was acknowledged as the recipient of the Gold Medal Award. The Governing Board extended congratulations to Dr. Mackauer.

No action required

9.2.17.2. C. Gordon Hewitt Award

Dr. S. Marshall was acknowledged as the recipient of the C. Gordon Hewitt Award. The Governing Board extended congratulations to Dr. Marshall.

No action required

9.2.18. Scholarship Committee

The Governing Board accepted the Scholarship Committee report. The Scholarship Committee reported that in order to encourage greater response to the Entomological Society of Canada Postgraduate Award, a poster has been prepared for distribution to universities.

No action required

9.2.18.1. Award Winners

Entomological Society of Canada Postgraduate Award winners were Gregory Ray Pohl and Heather Jane Dewar.

No action required

9.2.19. Heritage Committee

The Governing Board accepted the report.

No action required

9.2.20. Insect Common Names and Cultures Committee

The Governing Board accepted the report.

No action required

9.2.20.1. Purchase of Book on Beetles

I.S. Otvos moved and J. Doane seconded that E.M. Belton be authorized to purchase the book entitled *Canadian Beetles Injurious to Crops, Ornamentals, Stored Products and Buildings* by Campbell *et al.* for the Committee.

Carried

Action: Secretary

9.2.21. Student Affairs Committee

The Governing Board accepted the report. An Employment Booth was set up at the Annual Meeting.

No action required

9.2.22. Bilingualism Committee

The Governing Board accepted the report.

No action required

9.2.22.1. Translation of Titles and Abstracts

I.M. Smith moved and J.R. Spence seconded that whereas it is the goal of the Entomological Society of Canada to become a bilingual society, that the Entomological Society of Canada apply to NSERC or another appropriate government body to obtain the necessary funds to pay for the translation of titles and abstracts of *The Canadian Entomologist* and *Memoirs*, and until the necessary funding is obtained, that a group of 5 to 7 members of the Entomological Society of Canada be established who will respond to these translation needs as recommended in the 1989 report of the continuing Committee on Bilingualism.

Carried

Action: Scientific Editor and Bilingualism Committee

9.2.23. Graduate Research-Travel Grants Committee

N.J. Holliday moved and J.N. McNeil seconded that the report be accepted and the recommendations concerning eligible research-travel be accepted.

Carried

Action: Governing Board

9.2.24. Ad Hoc Committees

9.2.24.1. Pesticide Policy Committee

N. Angerilli moved and J.N. McNeil seconded that the name of the Pesticide Policy Committee be changed to Pest Management Policy Committee.

Carried

No action required

9.2.24.2. Diseases of Insects of Vegetables

The Governing Board accepted the report.

No action required

9.2.24.3. Endangered Insect Species

J.N. McNeil moved and R. Roughley seconded that the Endangered Insect Species Committee be made a continuing committee and the the recommendations of the report be the mandate for the committee.

Carried

Action: Governing Board

9.2.24.4. Research Cost/Benefit Committee

No report was received.

No action required

9.2.24.5. Secretary Search Committee

J.E. Laing reported that R. West was selected for the position of Secretary of the Entomological Society of Canada and will take over the duties on January 1, 1990

No action required

9.2.25. AASC and COPSE

No report was received.

No action required

9.2.26. CAWPRC

9.2.26.1 Withdrawal of Membership

N.J. Holliday moved and I.S. Otvos seconded that the Secretary write to CAWPRC indicating that the Entomological Society of Canada wishes to withdraw from the organization.

Carried

Action: Secretary

9.2.26.2. Membership in Organizations

I.M. Smith moved and R. Roitberg seconded that the Secretary prepare a list of organizations to which the Entomological Society of Canada is paying membership fees.

Carried

Action: Secretary

9.2.27. Regional Directors Reports

Reports from Affiliate Societies were presented by:

R.P. Jaques - Entomological Society of Ontario

C. Vincent - Société d'entomologie du Québec

R. Roughley - Entomological Society of Manitoba

J. Doane - Entomological Society of Saskatchewan

I.S. Otvos - Entomological Society of British Columbia

D.J. Larson - Acadian Entomological Society

No action required

10. Other Business

10.1. Invitation from the Entomological Society of Saskatchewan

G.H. Gerber moved and R. Roughley seconded that the invitation for the Entomological Society of Canada to meet jointly with the Entomological Society of Saskatchewan in 1992 be accepted.

Carried

Action: Secretary

10.2. Canada Biting Fly Centre

N.J. Holliday moved and R. Roughley seconded that the President write a letter to the Prime Minister of Canada protesting the general lack of attention and activity in biting fly research in Canada which is exemplified by the recent demise of the Canada Biting Fly Centre.

Carried (7 for, 6 against)

Action: President

10.3. Address Correction Labels

N.J. Holliday moved and I.S. Otvos seconded that envelopes or other mailing containers for the Society's publications bear a printed form suitable for members to use to notify the Society of any changes of the member's address.

Carried

Action: Treasurer

10.4. Office Communications

B. Roitberg moved and J.E. Laing seconded that a facsimile machine be purchased for the office of the Entomological Society of Canada.

Carried

Action: Treasurer

10.4.2 Modem

The Governing Board agreed to defer action on the purchase of a modem.

11. Date of Next Meeting

The next meeting of the Governing Board will be held in Salon C, Radisson Plaza Hotel, St. John's Newfoundland, at 1230 hrs.

12. Adjournment

On a motion by J. Doane, the meeting adjourned at 1345 hrs, October 1, 1989.

Minutes

Governing Board Meeting

Radisson Plaza Hotel,
St. John's, Newfoundland

October 4, 1989

The meeting was called to order at 1230 hrs on October 4, 1989 by President J.N. McNeil, Those present were J.N. McNeil, President; D.C. Eidt, Past President; J.E. Laing, First Vice-President; D.E. Bright, Treasurer; G.H. Gerber, N. Angerilli, B. Roitberg, D. Quiring, L.A. Gilkeson, Directors-at-Large; R.P. Jaques (ESO), C. Vincent (SEQ), D. Larson (AES), R. Roughley (ESM), J. Doane (ESS), J.R. Spence (ESA), I.S. Otvos (ESBC), Directors from Affiliate Societies; R.B. Aiken, Bulletin Editor; J.A. Shemanchuk, Secretary.

1. Notice of Meeting

The notices of this meeting was announced at the Governing Board Meeting on October 1, 1989.

2. Proxies and Absences

Absent with apologies: R. Ring, J.E. Hollebone, A.B. Ewen

3. Additions to Agenda and Approval of Agenda

C. Vincent moved and J.R. Spence seconded that the agenda as circulated be accepted.

Carried

No action required

4. Minutes of the previous Governing Board Meeting

The minutes of the Governing Board Meeting held on September 30 and October 1, 1989 were accepted by consensus.

5. Business Arising from Previous Minutes

There was no business arising from previous minutes.

6. Other Business

6.1 Appointments

6.1.1. Executive Council

G.H. Gerber moved and R. Roughley seconded that the Executive Council for 1989-90 be: J.N. McNeil, President; D.C. Eidt, Past President; J.E. Laing, First Vice-President; R. Ring, Second Vice-President.

Carried

No action required

6.1.2. Trustees

J.R. Spence moved and D. Quiring seconded that the Trustees for 1989-90 be: D.E. Bright, Treasurer; A.B. Ewen, Scientific Editor; C.H. Craig and R.H. Elliott, Assistant Scientific Editors; R. Aiken, Bulletin Editor; and R. West, Secretary

Carried

No action required

6.1.3. Committees and Representatives

D.C. Eidt moved and I.S. Otvos seconded that the Governing Board approve the list of committees and representatives as prepared by the President and further that the Governing Board will accept the President's appointees to the remaining positions to be filled.

Carried

No action required

6.2 Budget

D.E. Bright presented the budget for 1990. An item of \$50 for membership to CAWPRC was deleted and an item of \$4000 to cover Research-Travel Grants was added.

J.R. Spence moved and J.E. Laing seconded that the budget as amended be accepted.

Carried

No action required

7. New Business

7.1 Scholarship Stipend

D.C. Eidt moved and N. Angerilli seconded that the stipend of the two scholarships be increased from \$2000 to \$2500.

Defeated

No action required

8. Next Meeting

The next meeting of of Governing Board will be held on Saturday and Sunday, October 6 and 7, 1990 at 0900 hours at The Banff Centre.

9. Adjournment

The meeting was adjourned at 1400 hours on a motion by G.H. Gerber.

Minutes

39th Annual General Meeting

Radisson Plaza Hotel,
St. John's, Newfoundland

October 3, 1989

President D.C. Eidt called the meeting to order at 1630 hrs. There were about 70 members in attendance.

1. Notice of Meeting

The notice of meeting was published in the March 1989 issue (21:1) of the *Bulletin*

2. Additions to the Agenda and Approval of the Agenda

J.A. Shemanchuk moved and P.W. Riegert seconded that the agenda as amended be accepted.

Carried

3. Proxies

No proxies were registered

4. Deceased Members

A moment of silence was observed in memory of Charles Wilmot Maxwell, Selwyn S. Roback, Wilhelm Kuhnelt, Alain Giard, Les H. McMullen and Neil Devlin Holmes.

5. Minutes of the 38th Annual General Meeting

J.A. Shemanchuk moved and G.H. Gerber seconded that the minutes of the 38th Annual General Meeting as printed in the December 1988 issue (Vol. 20) of the *Bulletin* be adopted.

Carried

6. Business Arising from Previous Minutes

6.1. Page Waivers for *Memoirs*

J.A. Shemanchuk moved and J.R. Spence seconded that the following change regarding waivers for *Memoirs* be adopted:

"that no more than 50 pages or 4%, whichever is least, of a volume of the *Memoirs* be allocated to pages with page charges waived."

Carried

6.2. Continuing Committee on Endangered Insect Species

J.A. Shemanchuk moved and J.R. Spence seconded that the Ad Hoc Committee on Endangered Insect Species of the Entomological Society of Canada be a Continuing Committee and the recommendations in the report of the Ad Hoc Committee on Endangered Species serve as guidelines.

Carried

6.3 Change to Standing Rules: Student Paper Competition

J.A. Shemanchuk moved and G.H. Gerber seconded that the following Standing Rules be adopted. Standing Rule IX-5 which reads:

Standing Rules IX. Meeting

5. The Society may provide cash prizes of one hundred dollars (\$100.00) annually to each of the winners of the Student Paper Competition of the Annual Meeting. When the Student Paper Competition is sponsored by the Society the guidelines for eligibility in the competition are:

- (i) The student must be enrolled in a graduate degree program or have graduated from the program less than six (6) months previously.
- (ii) The student must be registered at the Annual Meeting.
- (iii) The student must be the principal investigator and sole author of the paper.
- (iv) The student need not be a member of the Entomological Society of Canada.

Carried

7. Report from the Governing Board

President D.C. Eidt presented a report on behalf of the Governing Board which will be published in the *Bulletin* at a later date. G.E. Ball moved and P.W. Riegert seconded that the President's Report be accepted.

Carried

8. Canadian Federation of Biological Societies

8.1. Membership in the Canadian Federation of Biological Societies

J.N. McNeil moved and R. Roughley seconded that the recommendation of the Executive Committee which reads "Entomological Society of Canada will join the Canadian Federation of Biological Societies, effective September 1990, with no consequent increases in the Entomological Society of Canada membership dues before January 1, 1994." be adopted.

Carried

8.2. Student membership in the Canadian Federation of Biological Societies

J.E. Laing moved and J.N. McNeil seconded that student members of the Entomological Society of Canada with Canadian addresses be included in the membership list sent to the Canadian Federation of Biological Societies.

Carried

8.3. Donations to cover the annual dues of the Canadian Federation of Biological Societies

J.R. Spence moved and G.E. Ball seconded that on the Entomological Society of Canada dues notice there is a provision for members to make an optional contribution to the Entomological Society of Canada equivalent to the Canadian Federation of Biological Societies dues.

Carried

9. Auditor's Report

D.E. Bright presented the Auditor's Report and reported that it will be published in the *Bulletin*. Moved by D.E. Bright and seconded by E.C. Becker that the Auditor's Report as presented be accepted.

Carried

10. Elections Committee Report

J.A. Shemanchuk read the Elections Committee report. Those elected were:

Second Vice-President: R. Ring

Director-at-Large: L.A. Gilkeson

D. Quiring

Fellowship Committee: A.R. Forbes

V.R. Vickery

Honorary Member: T. Finlayson, Vancouver, B.C.

Referendum C.F.B.S.: Yes - 188 No - 109

J.A. Shemanchuk moved and W.A. Charnetski seconded that the Elections Committee report be accepted and ballots destroyed.

Carried.

11. Installation of Officers

President D.C. Eidt turned the gavel over to J.N. McNeil as incoming President of the Entomological Society of Canada. The new President accepted the gavel and thanked the members for the honour of being President. The new President thanked D.C. Eidt for his service to the Society and presented him with a service award. The new President then called on E.C. Becker, retiring Past President to escort R. Ring, Second Vice-President to the dias.

12. Appointment of Auditor

D.E. Bright moved and E.C. Becker seconded that McCay, Duff and Company be retained as auditors for 1989.

Carried

13. Resolutions

President J.N. McNeil asked G.G.E. Scudder present the resolutions on behalf of the Entomological Society of Canada.

Resolutions:

Whereas the 1989 Joint Annual Meeting of the Entomological Society of Canada and the Acadian Entomological have met under the banner Acanadent '89 at the Radisson Plaza Hotel in St. John's, Newfoundland, October 2-4, 1989, and

Whereas there has been a full and interesting meeting of lectures, symposia and papers, and

Whereas the program has been planned with care and concern for those attending, and

Whereas there has been ample opportunity provided for social interaction, and visits to St. John's and other areas of Newfoundland,

Be it resolved that the Entomological Society of Canada and the Acadian Entomological Society

express their sincere thanks to the Organizing Committee R.J. West, P.E. Dixon, D.J. Larson, E.J. Dobesberger, K.P. Linn, A.G. Raske, M.A. Larson, A. West, W.W. Bowes and M.H. Colbo and also to R.F. Morris for their hard work and skill in arranging a most worthwhile and entertaining program, and

Be it further resolved that the two Societies thank Forestry Canada, Memorial University and the donors for their generous assistance, and

Be it further resolved that the two Societies express their thanks to the Management and Staff of the Radisson Plaza Hotel and Bowring Bros. for their courteous assistance during the meeting.

Moved by G.G.E. Scudder and seconded by G.H. Gerber that the report of the Resolutions Committee be accepted.

Carried

14. New Business

14.1. 19th International Congress of Entomology in Beijing, 1992

G.E. Ball, as a member of the Council for the 19th International Congress of Entomology, reported that plans for the Congress are in progress and further announcements will be made on the state of preparation for the Congress.

15. Notice of the 40th Annual General Meeting

The 40th Annual General Meeting will be held in Banff, Alberta, on October 9, 1990. The meeting place and time will be announced at a later date.

16. Adjournment

The 39th Annual General Meeting adjourned at 1745 hours on a motion by I.S. Otvos.

JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA AND THE ENTOMOLOGICAL SOCIETY OF ALBERTA

The Banff Centre, Banff, Alberta
October 6 to 10, 1990

Notice and Call for Papers

October 6	09:00 - 17:00	ESC Governing Board Meeting
October 7	09:00 - 14:00	ESC Governing Board Meeting
	15:00 - 17:00	Opening Ceremonies ESC Awards Gold Medal Address.
	19:00 - 20:00	Students meet the Board Reception
	20:00 - 23:00	General Mixer
October 8	08:30 - 12:00	Symposium: Systematics and Entomology: Diversity, Distribution, Adaptation and Application** Organizers: G.E. Ball, H.V. Danks
	13:00 - 17:00	Discussion Group: Effects of Climatic Change on Insect Distribution and Abundance* Organizer: D. Johnson
	17:30 -	Submitted Papers
	21:30 -	B. B. Q. President's Mixer (by invitation)
October 9	08:30 - 12:00	Symposium: Biotechnology & Insect Control*** Organizer: G. R. Wyatt
	13:00 - 15:00	Discussion Group: Arctic Insects: Faunistics, Biology and Abundance* Organizers: H.V. Danks, R.A. Ring
Submitted Papers	15:15 - 16:00	Heritage Lecture (by John Carr)
	16:00 - 17:30	ESC Annual General Meeting
	18:00 - 19:00	Banquet Cocktail Hour
	19:00 -	Banquet
October 10	08:30 - 12:00	Discussion Group: Livestock Insects* Organizer: A. Khan
		Submitted Papers
	12:00 - 14:00	ESC Governing Board Meeting
	14:30 - 16:00	ESA Annual General Meeting

* ** *** Further information on following page.

*Those wishing to participate in the Discussion Groups are asked to contact the following:

“Effects of Climatic Change on Insect Distribution and Abundance”

Dr. Dan Johnson,
Agriculture Canada, Research Station,
P. O. Box 3000, Main,
Lethbridge, Alberta, T1J 4B1 (Ph. 403-327-4561)

“Arctic Insects: Faunistics, Biology and Ecophysiology”

Dr. R. A. Ring,
Department of Biology,
University of Victoria,
Victoria, B. C. V8W 2Y2. (Ph. 604-721-7102)

“Livestock Insects”

Dr. Ali Khan,
Animal Industry Division,
Alberta Agriculture,
7000 - 113 St.,
Edmonton, Alberta T6H 5T6 (Ph. 403-427-5083)

** Details of the symposium “Systematics and Entomology: Diversity, Distribution, Adaptation and Application”, organized by G.E. Ball and H.V. Danks appeared in the *Bulletin* 21(4): 101-102

*** Details of the symposium “Biotechnology and Insect Control”, organized by G.R. Wyatt will appear in an upcoming issue of the *Bulletin*.

RÉUNION ANNUELLE CONJOINTE DE LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA ET DE LA SOCIÉTÉ D'ENTOMOLOGIE DE L'ALBERTA

The Banff Centre, Alberta
du 7 au 10 octobre 1990

Avis et Appel de Présentations

6 octobre	09:00-17:00	Réunion du Conseil de Direction de la SEC
7 octobre	09:00-14:00	Réunion du Conseil de Direction de la SEC
	15:00-17:00	Cérémonies d'Ouverture Décorations de la SEC Allocution Médaille d'or
	19:00-20:00	Les Etudiants Gradués recontrent le Conseil
	20:00-23:00	"Mixer" Général
8 octobre	08:30-12:00	Symposium: La Systématique et l'Entomologie: Diversité, Distribution, Adaptation et Application** Organisateurs: G.E. Ball, H.V. Danks
	13:00-17:00	Groupe de Discussion: Les Effets des Changements Climatiques sur la Distribution et l'Abundance des Insectes* Organisateur: D. Johnson Communications
	17:30-	Barbécue
	21:30-	Réception du Président (par invitation)
9 octobre	08:30-12:00	Symposium: La Biotechnologie et le Contrôle des Insectes*** Organisateur: G.R. Wyatt
	13:00-15:00	Groupe de Discussion: Les Insectes de l'Arctique: Faunistique, Biologie et Abondance* Organisateurs: H.V. Danks, R.A. Ring Communications
	15:15-16:00	Historique de l'Entomologie (par John Carr)
	16:00-17:30	Assemblée Générale de la SEC
	18:00-19:00	Cocktail
	19:00-	Banquet
10 octobre	08:30-12:00	Groupe de Discussion: Insectes du Bétail* Organisateur: A. Khan Communications
	12:00-14:00	Réunion du Conseil de Direction de la SEC
	14:30-16:00	Assemblée Générale de la SEA

*Ceux qui désirent participer aux Groupes de Discussion sont priés de contacter le personnes suivantes:

“Les Effects des Changements Climatiques sur la Distribution et l’Abondance des Insectes”

Dr. Dan Johnson,
Agriculture Canada, Station de Recherche,
C.P. 3000, Main,
Lethbridge, Alberta T1J 4B1 (Tél. 403-327-4561)

“Les Insectes de l’Arctique: Faunistique, Biologie, et Ecophysiologie”

Dr. R.A. Ring,
Département de Biologie,
Université de Victoria,
Victoria, B.C. V8W 2Y2 (Tél. 604-721-7102)

“Les Insectes du Bétail”

Dr. Ali Khan,
Division de l’Industrie Animale,
Alberta Agriculture,
7000 - 113 St.,
Edmonton, Alberta T6H 5T6 (Tél. 403-427-5083)

**Les détails du Symposium: “La Systématique et l’Entomologie: Diversité, Distribution, Adaptation et Application”, organisé par G.E. Ball et H.V. Danks, ont paru dans le *Bulletin* de la SEC 21(4): 101-102.

***Les détails du Symposium: “La Biotechnologie et le Contrôle des Insectes”, organisé par G.R. Wyatt, paraîtront dans un numéro futur du *Bulletin* de la SEC.

**JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA
AND THE ENTOMOLOGICAL SOCIETY OF ALBERTA**

The Banff Centre, Banff, Alberta
October 7 - 10, 1990

REGISTRATION FORM

Check one: Regular _____, Student _____

Name _____ Title _____
(last) (first) (initial)

Address: _____

City: _____ Province/State: _____

Postal Code: _____ Phone: _____

Registration Fees - figures are \$ Cdn
(After Sept. 1, 1990, add \$10 to each fee)

Registration, regular	\$75	_____
Registration, student	\$45	_____
Registration, spouse	\$35	_____

(name of spouse)

TOTAL _____

FIELD TRIPS AND TOURS: A trip to the Tyrell Museum of Paleontology in Drumheller will depart Banff, October 10 in the afternoon, overnight in Drumheller and return to Calgary by 3 p.m. October 11. Approximate cost: \$150.00 per person.

ACCOMMODATION: See announcement in this issue of the *Bulletin*

Please return this form and registration fees to:

Dr. A. Finnamore,
Provincial Museum of Alberta,
Edmonton, Alberta
T5N 0M6

**RÉUNION ANNUELLE CONJOINTE DE LA SOCIÉTÉ D'ENTOMOLOGIE
DU CANADA ET DE LA SOCIÉTÉ D'ENTOMOLOGIE DE L'ALBERTA**

The Banff Centre, Banff, Alberta
du 7 au 10 October 1990

FORMULAIRE D'INSCRIPTION

Indiquez: Régulier ____, Étudiant ____

Nom _____ Titre _____
(nom de famille) (prénom) (initiales)

Adresse: _____

Ville: _____ Province/État: _____

Code Postal: _____ Téléphone: _____

Frais d'inscription (\$ Cdn)

(Après le 1 septembre 1990, ajoutez \$10)

Inscription, régulier \$75 _____

Inscription, étudiant \$45 _____

Inscription, conjoint \$35 _____

(nom de conjoint) TOTAL _____

EXCURSION: Un voyage au Musée de Paléontologie Tyrell à Drumheller a été organisé. Le départ se fera du 10 octobre dans l'après-midi, et les participants passeront la nuit à Drumheller. Le voyage se terminera à Calgary le 11 octobre à 15:00 heures. Coût approximatif de l'excursion: \$150 par personne.

LOGEMENT: Voir l'annonce dans ce numéro du *Bulletin*.

Veuillez retourner ce formulaire ainsi que les frais d'inscription à:

Dr. Albert Finnamore,
Provincial Museum of Alberta,
Edmonton, Alberta T5N 0M6

**JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF
CANADA AND THE ENTOMOLOGICAL SOCIETY OF ALBERTA**

SUBMITTED PAPER AND POSTER PRESENTATION REPLY FORM

Please return to: Dr. R. H. Gooding,
Department of Entomology,
University of Alberta,
Edmonton, Alberta
T6G 2E3

Deadline: Postmarked on or before June 30, 1990

Title (not to exceed 15 words): _____

Author's Name(s): _____

Institution and Address: _____

To be presented by: _____

Abstract(not to exceed 50 words): _____

Form of Presentation Desired (check one):

Oral presentation of 12 minutes plus 3 minutes discussion

☐

Poster presentation

☐

Projection Equipment: A Kodak Carousel projector and an overhead projector will be available for each session. Slides should be provided in a carousel. Please contact the program chairman if other equipment is required.

**RÉUNION ANNUELLE CONJOINTE DE LA SOCIÉTÉ D'ENTOMOLOGIE
DU CANADA ET DE LA SOCIÉTÉ D'ENTOMOLOGIE DE L'ALBERTA**

**FORMULAIRE DE PARTICIPATION:
LES COMMUNICATIONS ORALES ET LES POSTERS**

Veillez retourner à: Dr. R. H. Gooding,
Department of Entomology,
University of Alberta,
Edmonton, Alberta
T6G 2E3

Date limite: au plus tard le 30 juin 1990

Titre (15 mots au maximum): _____

Nom de l'auteur (des auteurs): _____

Institut et Adresse: _____

Nom de presenteur: _____

Résumé(50 mots au maximum): _____

Format de présentation (cochez votre choix):

Communication orale (12 min et 3 min de discussion)

☐

Poster

☐

Équipement audiovisuel: Un projecteur Kodak pour diapositives de 35 mm et un rétroprojecteur seront disponibles à chaque séance. Veuillez contacter le responsable du programme si vous avez besoin d'équipement additionnel.

JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA
AND THE ENTOMOLOGICAL SOCIETY OF ALBERTA

The Banff Centre, Box 1020, Banff, Alberta T0L 0C0
October 7 - 10, 1990

ACCOMMODATION REGISTRATION FORM

NAME: DR./MRS./MR./MS. _____ M____F____

AFFILIATION: _____

ADDRESS: _____

POSTCODE _____

TELEPHONE (____)____ - _____ BUS. (____)____ - _____ RES.

ARRIVAL DATE: _____ FIRST MEAL: _____

DEPARTURE DATE: _____ LAST MEAL: _____

Room Rates (includes three meals per day)

Single: \$86.70/person/day

Sharing: \$72.00/person/day

Accommodation requirements: (Please check one)

_____ SINGLE*

_____ SHARING(Sharing with spouse/companion)**

_____ SHARING(Sharing with another delegate)**

* As single accommodation is limited, rooms will be assigned on a first come, first served basis.

** If sharing with someone in particular, please indicate the name of the person below. Otherwise, if you would like to share but with no one in particular, we will assign you to room with another delegate of the same gender. **Preferred roommate** _____

I will not be staying at the Banff Centre and have made my own arrangements at the _____
_____ (information for message purposes only)

Please complete and mail by July 31, 1990 to:

Patrick Scholefield,
Alberta Environment
Second Floor, Deerfoot Square
2938 - 11 Street N.E.
Calgary, Alberta T3L 1N7

**RÉUNION ANNUELLE CONJOINTE DE LA SOCIÉTÉ D'ENTOMOLOGIE
DU CANADA ET DE LA SOCIÉTÉ D'ENTOMOLOGIE DE L'ALBERTA**

du 7 au 10 October 1990
The Banff Centre, Box 1020, Banff, Alberta T0L 0C0

FORMULAIRE D'INSCRIPTION POUR LE LOGEMENT

NOM: DR./MME./M./MAD. _____ M _____ F _____

AFFILIATION: _____

ADRESSE: _____

_____ CODE POSTALE _____

TÉLÉPHONE (____) ____ - _____ Affaires. (____) ____ - _____ Domicile.

DATE D'ARRIVÉE: _____ PREMIER REPAS: _____

DATE DU DEPART: _____ DERNIER REPAS: _____

Frais d'hôtel(incluent trois repas par jour)

1 personne: \$86.70/person/day

2 personnes: \$72.00/person/day

Logement requis: (Cochez votre choix)

_____ CHAMBRE INDIVIDUELLE*

_____ DÉSIRE PARTAGER AVEC CONJOINT**

_____ DÉSIRE PARTAGER AVEC UN AUTRE DÉLÉGUÉ(E)**

* Le nombre de chambres individuelles est limité. Elles seront assignées aux premiers venus.

**Si vous désirez partager une chambre avec une personne en particulier, veuillez indiquer son nom ci-dessous. Si vous désirez partager une chambre mais non pas avec une personne en particulier, nous vous assignerons une chambre avec un autre délégué du même congrès et du même sexe.

Je ne resterai pas au Banff Centre et j'ai fait mes propres arrangements à _____
_____ (ces informations seront utilisées pour transmettre les messages seulement).

Remplissez et postez avant le 31 juillet 1990 à:

Patrick Scholefield
Alberta Environment
Second Floor Deerfoot Square
2938 - 11 Street N.E.
Calgary, Alberta T3L 1N7

User Fee: \$17.00/person/day (includes lunch, subject to change)

Those people staying off campus, for whatever reason, will be subject to a user fee which will be the responsibility of the individual. These people have the same privileges as those staying on campus (i.e. parking, classrooms, lounges, recreation building and lunch). All off campus delegates will be required to register at the Front Office where they will receive the same "passport" as the on-campus delegates.

"No Shows" Policy:

"No Shows" is a term applied to those people who, for a variety of reasons, fail to register as planned. A room will be held until 11:00 pm on the planned day of arrival. If it is known that some people will arrive after this time, we will require 24 hours notice. Otherwise, these people will be classed as "No Shows" and a charge for the first night's accommodation will be levied against the individual.

On the Saturday evening there will be a limited number of rooms available on campus. Therefore, **BOOKEARLY**, otherwise you will have to arrange to spend Saturday evening in a motel in Banff. More rooms will be available on Sunday, October 7 to meet the needs of the meeting.

Opening Address:

The Opening Address is scheduled for 3:00 pm on Sunday, October 7 and the meeting will finish at noon on October 10. Those delegates wishing to stay over that evening are advised to book rooms at one of the motels in Banff as we are unable to secure rooms on campus.

Air Canada is the Official Air Carrier for the 1990 ESC/ESA Meeting. We urge you to make your bookings by phoning 1-800-361-7585, and please specify that you are attending the 1990 ESC/ESA Meeting in Banff, Alberta.

Les Frais d'Utilisation: \$17/personne/jour (inclut le repas du midi, sujet aux changements)

Ceux qui logeront hors campus, pour quelque raison que ce soit, seront sujets à des frais d'utilisation qui seront la responsabilité de l'individu. Le paiement de ces frais accordera à ces délégués les mêmes privilèges réservés aux délégués logeant sur le campus (i.e., le stationnement, les salles de classe, les salons, le pavillon des loisirs, et le repas du midi). Tous les délégués logeant hors campus devront s'inscrire au Bureau d'Accueil, où ils recevront le même "passeport" que les délégués logeant sur le campus.

La Politique de Non-Assistance:

Les chambres seront réservées jusqu'à 23:00 heures du jour d'arrivée. Les personnes prévoyant arriver après 23:00 heures devront nous en avertir au moins 24 heures à l'avance. Sinon, ces personnes seront classées "No Shows" et seront facturées pour la première nuit.

Il y aura un nombre limité de chambres disponibles sur le campus samedi soir le 6 octobre. **Faites vos réservations le plus tôt possible.** Sinon vous devrez trouver un autre logement pour le samedi soir (voir la liste des motels à Banff en annexe). Il y aura un plus grand nombre de chambres disponibles dimanche le 7 octobre, pour répondre aux besoins des congressistes.

Le Discours d'Ouverture:

Le Discours d'Ouverture se tiendra à 1500 h, dimanche le 7 octobre et le congrès se terminera le 10 octobre à midi. Les délégués qui désirent passer la nuit du 10 octobre à Banff sont avisés de louer une chambre à l'un des motels de Banff, parce que les chambres sur le campus ne seront pas disponibles.

ARTICLES

Bitten by the Collecting Bug - Confessions of an Amateur Bug Hunter

by

John Kozial
Fjorkdale, Saskatchewan

The subject I would like to address today is one that is rarely discussed at most professional entomological meetings. It concerns amateurs in entomology with particular reference to myself and how I became interested in insects. Also, I will discuss some of my current entomological activities and my reasons for being a collector.

I have been a member of the Entomological Society of Saskatchewan since 1982. However, unlike the majority of other members of the Society - who are 'professionals' - I am what is commonly referred to as an "amateur entomologist". Whenever most of us think of an "amateur" we immediately conjure up an image of a young boy dashing madly across a meadow, wildly swinging a butterfly net so as to capture an elusive insect. This is a recognized stereotypic image of an "amateur entomologist", one that persists in the minds of most people, even those of "professional entomologists". Amateurs just do not seem to be taken seriously!

The type of "amateur" that I will be speaking of today is quite different from that just mentioned. The term "amateur" can be defined in a number of different ways. My definition is: an adult who has little or no formal training in entomology but is actively engaged in collecting and studying insects as a hobby or avocation. He is not a paid professional and he makes his living in another line of work. If a person is referred to as an "amateur" this does not mean that he or she is not a professional in their own right. Over one-third or 36% of today's adult "amateur entomologists" work in related scientific fields; 20% are involved in education as teachers, lab instructors, 4-H leaders, park naturalists, etc. The remaining 50% come from backgrounds that are as varied and as different as jobs and people. For example, two of my amateur entomological friends are a retired school teacher and a clergyman.

As for myself, I am a grain farmer from the north-east district of central Saskatchewan. I have been collecting, photographing and studying insects for the past 13 years. I have been interested in nature and in the outdoors since early boyhood. My childhood was spent exploring and playing in the fields and forests that surrounded our farm. From an early age I developed a strong interest in books and reading. I had soon read all the books on natural history available to me from the shelves of school libraries.

The very first book on entomology that I purchased as a child, was *The Moth Book* by W.J. Holland. I well remember how I used to spend many hours carefully pouring over the colourful plates in the book; admiring and becoming totally absorbed in the seemingly endless rows of strange, wonderful and beautiful moths. As my interest in insects grew our house soon became littered with dozens of peanut butter jars containing a wide assortment of creeping, crawling and hopping creatures. My mother looked on with tolerant amusement, as did the rest of my family and relatives. Secretly, no doubt, everyone hoped that I would soon grow out of it. Fortunately I never did.

During my mid-teens I had an opportunity to visit the Saskatchewan Museum of Natural History in Regina. I was very impressed with all the large animal and dinosaur displays until I discovered the insect showcases. Then I became ecstatic! I couldn't believe my eyes as I gazed intently at the myriad of colourful and odd-shaped insects under the glass. I realized then that it was too late, I could not be

saved for I had been bitten by the collecting bug. I was destined to suffer the consequences of its bite for the rest of my days.

Before I left the Museum I bought a copy of Ron Hooper's book, *The Butterflies of Saskatchewan*, to assist me in learning how to identify the Saskatchewan butterflies. This book has proven to be an invaluable guide, one that I use regularly to identify my captures. You can well imagine my delight when, not too many years later, I met Ron Hooper in person at one of the first meetings of the Entomological Society of Saskatchewan that I attended. Ron has become a fast friend and a constant source of encouragement and enthusiasm.

I began to seriously collect insects in 1976 and continued to do so in relative seclusion from other amateur or professional entomologists. No one except my immediate family and a few very close friends knew that I had such an unusual hobby. However, that was about to change. During the summer of 1982, Dr. Alf Arthur from the Agriculture Canada Research Station, Saskatoon, was conducting field work on the bertha armyworm near my hometown of Bjorkdale. Evidently he had learned that there was a young man in the district who collected insects. On a bright, warm, summer day I was greeted at my farmhouse door by Dr. Arthur and two of his field assistants. He explained his own involvement, as a professional entomologist, in the bertha armyworm research program and then requested permission to view my insect collection. I was rather surprised and taken aback for I never expected a professional entomologist to take the time to visit me in my home and to inspect the small collection of an unknown collector. However, I consider the visit a very fortuitous one because Dr. Arthur was very supportive of my efforts, gave me a lot of encouragement and advice and also signed me up as a member of the Entomological Society of Saskatchewan! Through the Society I came in contact with other professional entomologists as well as a few amateurs who were also collecting and studying Saskatchewan insects. Each fall, since that time, I look forward to the annual meeting of the Society for it is here that I catch up on the activities of my fellow amateurs and professionals. It is also an opportunity to socialize and to renew old friendships.

My collecting efforts since 1976 have focussed primarily on the Lepidoptera and Coleoptera - butterflies, moths and beetles. To date I have collected 96 of the 144 species of butterflies known to occur in Saskatchewan. In addition, through the use of light traps, I have also collected nearly 300 species of Saskatchewan moths. Within the last three years I have added to my collection by including a significant number of tropical butterflies, moths and beetles which I purchased from various companies in the United States. Occasionally I have donated insect specimens to the Saskatchewan Museum of Natural History in Regina. Also, new insect records or range extensions have been reported to Ron Hooper who is currently up-dating and publishing lists of Saskatchewan insects.

In 1980, I purchased my first 35 mm camera and some close-up equipment that enabled me to more accurately record live insects in the field. Since that time the photography of insects, wildflowers, landscapes, and all manner of natural history subjects has become another one of my all-absorbing hobbies. Within the last five years I have accumulated a collection of more than 5,000 photographic slides dealing with the above topics. In the summer months my spare time is equally divided between collecting and photography.

Last fall I joined the Lepidopterist's Society. It has a membership of 1,500 professional and amateur lepidopterists in all parts of the world. This membership has already opened up vast new opportunities to exchange information and specimens with other collectors. One of the most rewarding aspects of my hobby is meeting other fascinating people through the medium of correspondence.

In the last two years I have twice placed my collection on public display in local hobby shows. Public response has been exceptional: people are simply amazed at the beauty and variety of our own local Saskatchewan insects. Most people have never seriously considered, or taken the time to examine insects at close range. My collection has been a means of introducing ordinary people to the fascinating and bizarre world of the insects. As a consequence of the public exhibition of my collection I have been

invited to tour a number of local schools where I have displayed my captures and have given slide shows and talks on insects. Needless to say, these activities have added to my already busy work schedule.

Now that I have boosted my image in the eyes of this captive audience, I wish to digress a bit and discuss the reasons why amateurs collect insects. I have borrowed some information and ideas - which also reflect my own views - from the 1988 Presidential Address of Jerry A. Powell of the Lepidopterist's Society. His address, entitled "*Lepidopterists - Collectors and Biologists* ", was published in the Society's journal.

The urge to collect and accumulate articles and artifacts of virtually anything ranging from barbed wire to antique cars, is a universal affliction that has hooked a great many people in all walks of life. I am not alone in having been bitten by the collecting bug. Psychologists call the collecting urge a "personality disorder". However, I believe that those who have not been bitten are missing out on a lot of interesting things that life has to offer.

Some years ago Gary Larson, the zany animal cartoonist, depicted in one of his thought-provoking cartoons, a group of butterfly collectors dressed out in smiles as they returned triumphantly from a hunt with a huge swallowtail butterfly strapped to the hood of their car. The whole scene is absolutely ridiculous because the butterfly is half the size of the car. But this cartoon, perhaps more than any other, truly expresses the feelings of many collectors in a way that make words inadequate. A specimen, once captured, has the significance and importance of a rare and distinguished trophy in the mind of the collector.

With a little reflection and thought a person can come up with many valid reasons for collecting. I derive great pleasure from the collection itself; to make it as neat and attractive as possible. I know of the many hundreds of hours of work that have gone into making a presentable collection. I know how much patience it has required to collect, spread, label, and arrange the insects. I actually enjoy spreading and preparing insect specimens even though, at times, it can get a little frustrating and physically demanding when your back and eyes suffer under the strain. But the challenge of collecting better specimens to replace those that are badly rubbed or damaged is another goal that keeps you going.

Considerable satisfaction is also derived from the challenge of the actual hunt for the elusive insect. Planning the trip, searching for the right habitat, and predicting the timing of your visits to coincide with the flight or emergence period of a particular species, are all part of the fun and excitement of collecting. Anticipating success in your search is often half the fun of the whole exercise. The reward of finally netting the evasive creature, often after years of unsuccessful but diligent searches, is for me the culmination of the collecting experience. Whenever I look at some of the insects in my collection, the sight of a certain specimen immediately triggers fond memories of days long gone - bright, sunny summer days spent capturing and photographing butterflies in lush green meadows and forests, in new and wonderful locations.

This summer I had the good fortune - or luck - to add fifteen new species of Saskatchewan butterflies to my holdings. I well remember how my heart pounded and how I scarcely could contain my excitement when, with trembling fingers I carefully removed from the folds of my net my first specimen of the beautiful Old World Swallowtail - *Papilio machaon hudsonianus* . It was a moment I had been waiting for, for many years. I was especially happy because I collected it in an area where I had spent many fruitless hours in the past. This time I was successful. I can remember equally numerous times when a valued specimen had escaped through a seemingly invisible hole in my net or had slipped unexpectedly out of my grasp. Each time I was momentarily crestfallen and I would silently curse myself for being so careless and clumsy. Such are a few of my experiences as an amateur bug hunter.

Another driving force behind collectors is the simple love of adventure and the lure of the open road. Who among us does not enjoy travelling to new, little-known or exotic localities to collect insects? We all do and look forward to such opportunities with obvious delight. I think a good excuse for

collecting can be something as simple as escaping into the country for a weekend just to avoid telephones, traffic, job demands, family responsibilities and the like. After all, collecting is a lot more fun than attending business meetings, driving a tractor or sitting at a computer all day.

For most collectors, myself included, there is a great deal of pride involved in exhibiting a collection and in demonstrating your accomplishments. Many collectors would strongly deny this - after all, if you are altruistic what part could fame or notoriety possibly have in making a person collect insects? I think it boils down to the honest fact that even though we may collect for the enjoyment, for the challenge, and for the self-satisfaction obtained, we also greatly appreciate the recognition we may receive, especially from our fellow entomologists. I seriously wonder how long any person could maintain their enthusiasm for collecting if absolutely no one cared. I know that I would soon lose interest in entomology. The same thing holds true for any hobby, job or profession - we need to receive acclaim from our peers to help us maintain interest and enthusiasm for our work.

In addition to the enjoyment of collecting insects and curating a collection, there is a great deal of satisfaction derived from discovering facts "new to science". In my case I am pleased whenever I can report the presence of a new species in the province, to provide and donate additional specimens of rare or uncommon insects to the museum, or report range extensions of even our common insect species. These may not be great earth-shattering accomplishments, however, they still contribute in a small way towards increasing our knowledge and understanding of the Saskatchewan insect fauna.

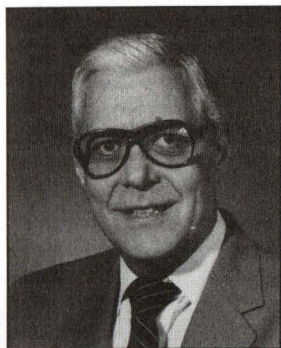
Howard Evans in his recent book, *The Pleasures of Entomology*, ends the first chapter with these words: "Entomologists, after all, do have to earn their keep ... no one will pay them for enjoying themselves. The day of the amateur, defined as one who has other means of support and studies insects just for the sport, is largely past." I disagree most emphatically with this statement even though, because I am an amateur, I may be biased. I think that there is plenty of room in a discipline as vast as entomology for amateurs to make significant contributions. I do not believe that amateur entomologists are an endangered species nor are they on the brink of extinction. In North America, the science of entomology had its humble beginnings, as did many other branches of science, in the works and dedicated efforts of a number of gifted amateurs. Names like James Fletcher, Thomas Say, W.H. Edwards, W.J. Holland and a host of others immediately come to mind. We have room for many, even today.

There are numerous ways in which amateurs can contribute to the science of entomology. Close to a million described species of insects are known to man and there is general agreement that thousands are yet to be discovered. Even here in Saskatchewan, the possibility remains that an amateur may discover a new species in his or her back yard. It should be noted, however, that even though an insect has been discovered, scientifically described and named, it doesn't mean that we know everything about the biology of that insect. The life histories of a large number of North American Lepidoptera are very poorly known, particularly those of the moths. Such basic information as a description of immature stages and larval food plants is unknown for a surprising number of species, even common ones. If you would like a real challenge, start collecting and studying the Microlepidoptera. Here the field is practically wide open for further investigation. Life history studies and rearing of insects are areas to which amateurs can contribute new knowledge. All that is needed are a few simple cages, good eyesight and an enquiring mind. A liberal dose of time and patience also helps. The classic work on insect behaviour by the great French amateur entomologist, Jean Henry Fabre, is an excellent example of what can be accomplished.

Besides rearing and collecting insects there are dozens of other studies and activities that an amateur can engage in without fear of becoming bored. Studies can be carried out on insect behaviour, longevity, seasonal abundance, diapause, distribution, mark-recapture experiments, genetics, etc. Pleasant pastime activities can include butterfly counts, butterfly gardening, collection of insect stamps, and insect photography. The list of things that can be done is limited only by your imagination.

The study of insects can take up an occasional afternoon or an entire lifetime depending on the inclination and ambition of the person involved. Over the years I've come to realize that I have indeed been fortunate to have been bitten by the collecting bug because it has provided me with countless hours of personal satisfaction, enjoyment, fun and adventure. To my special delight, my own interests have never waned and indeed they continue to grow stronger with each passing year. I hope that in my role as an amateur entomologist my greatest contribution will lie in my efforts to introduce insects and entomology to ordinary people. If more people knew of the fascinating miniature world that lies just outside their doors and under their feet perhaps the study of insects by amateurs and professionals alike, would become more popular, better understood and more fully appreciated.

PERSONALIA/PERSONNALITÉS



Gordon Richard Fuerst Davis

Gordon Richard Fuerst Davis retired on 27 February 1985 after 42 years of service in entomology with the Canada Department of Agriculture. His initial goal in life was not to study and work with insects, but rather to be a medical practitioner or a linguist. And therein lies his life's tale.

Gordie (most will know him as Dick) was born in Prince Albert, Saskatchewan, on 5 April 1925. After completing his junior matriculation in that city, he moved to Toronto where he then completed his High School education at Runnymede Collegiate Institute in 1943. That fall he enrolled at the University of Toronto and completed the first year in the College of Medicine. The Navy beckoned him so Gordon served with the R.C.N.V.R. from July 1944 to November 1945. Upon demobilization, he continued his education, this time at McGill University in Montreal.

He graduated with a Bachelor of Science (Honours) in Zoology in 1948. During his undergraduate days, Gordon received his initial exposure to insects and entomology. In the summer of 1947 he was employed by the Biological Control Unit, Belleville, Ontario, and sent to Parke Reserve, Quebec, where the Division of Entomology was conducting a program of biological control of the spruce budworm. At McGill, under the excellent tutelage of Dr. John Stanley, he was initiated into the scientific world of laboratory research. He was able to determine the growth curve and environmental index of the eggs of *Tribolium confusum*, a study that served him as an undergraduate thesis, a requirement for graduation in Honours Zoology.

Gordie remained at McGill to complete two more degrees, a M.Sc. in 1949 and a doctorate in 1952. While there he also served as a Laboratory Demonstrator (1948-1950) and a Teaching Fellow (1950-1951). In the summers of 1948-1951, he continued to work for the Biological Control Unit, taking charge of the investigations at Parke Reserve for the last two summers. In 1952, Gordon left the realm of the forest insects and transferred to the Dominion Entomological Laboratory, Field Crops Insect Unit, Saskatoon, Saskatchewan. This Laboratory became part of the Research Station after amalgamation in 1959, first as the Entomology Section and lately the Crop Protection Section. Gordon remained there until his retirement in 1985.

Because of his interest in animal nutrition, Gordon was given the responsibility of investigating

the nutritional requirements of field crop insect pests. These studies involved the determination of factors inducing insects to aggregate and feed on various host-plants; of qualitative and quantitative dietary requirements of insects for growth and development; of operative digestive-systems; and of the effect of changes in nutrition on the reproductive potential of insects. In addition to these studies he also collaborated with others at the University of Saskatchewan to develop techniques; one, to evaluate the nutritional value of protein feeds using yellow mealworm larvae; and another, using Bertha armyworm larvae to identify mycotoxins in feeds causing physiological trauma in cattle. These studies resulted in the publication of 84 research papers and many other miscellaneous articles.

While maintaining a very productive research program, Gordie has been involved in many other activities. He served as a Director (1973-1977, 1980-1981) and Honourary Secretary/Treasurer (1980-1984) of the Canadian Federation of Biological Societies, Inc., and is now an Emeritus Member. He was also a member of the Graduate Student Advisory Committees for the Departments of Biology, Education, and Veterinary Pathology and Biochemistry, at the University of Saskatchewan. He was a member of the Entomological Society of Canada (Regional Director, 1961); the Nutrition Society of Canada (Secretary, 1973-1977; Vice-President, 1979; President, 1980), the Entomological Society of American, Sigma Xi, and the Entomological Society of Saskatchewan (Vice President, 1960).

Although work in entomology and in the various scientific societies took much of Gordon's time, he was also very active in community affairs. He participated as a Trustee Representative in the Division III and Grade 10 Science Curriculum Committee, Saskatchewan Department of Education (1974-1977 and as a Member-at-Large (1977-1980). He was a Trustee of the Saskatoon Catholic School Board (1974-1977), a member of the Executive Committee, Parents' Association of the Saskatoon German Language School; and has held various executive offices while being a member of the Saskatchewan German Council, Inc. (Vice-President, 1987) since 1985.

When working at Parke Reserve in Quebec, Gordon met a young lady from Saint Alexandre de Kamouraska, Miss Pauline Berube. They were married on 25 May 1949, more than 40 years ago from the time of this writing. Four children graced this marriage; a son, Keven (computer consultant), and three daughters: Melanie (chanteuse), Joceline (teacher of French) and Danielle (student in Montreal).

Not content to be taking it easy after his retirement, Gordon embarked upon a second career, that of being a linguist, a career that he had considered more than 40 years ago. Since February 1987, when he accepted an appointment with The Co-operators Life Insurance Company in Regina, Gordon has been in charge of their Translation Section, Department of Human Resources. Here he provides all translation services for the Company, in both official languages of Canada, mans the francophone telephone line for the Direct Marketing Department, and serves as their French-language spokesman and interpreter.

This change in pace has been a therapeutic and rekindling experience for Gordon. Not only does he find his new work intensely interesting and challenging, he feels rewarded for being given a chance to 'break diapause' and progress along lines that had been considered but suppressed many years ago. His contribution to entomology has remained relatively unrecognized in Canada to date but any perusal of his documented research successes will convince the reader of the contribution his work has made in the furtherance of nutritional science in Canada and the world. His findings of the essentiality of amino acids in diets; the use of insects in solving nutritional problems; the screening of foodstuffs for nutritional quality, and the identification of mycotoxins in foodstuffs, all indicate the practical value of Gordon's forty years of research activity.

We wish him and Pauline many more years of successful living, and when they finally do take a well-deserved retirement, may their days be filled with the warm breezes of contentment, the sunny rays of restful leisure, the gentle rain of tranquility, and the lasting respect of their many friends.

Paul W. Riegert
Regina, Saskatchewan



Dr. Leslie (Les) Harold McMullen (1926 - 1989)

Les passed away in Victoria on August 11, 1989. Those of us who had the good fortune to work with Les and to know him well remember him as being kind, unselfish, generously helpful and, above all, a gentleman in every sense of the word.

Les retired on March 30, 1985 after 33 years with Forestry Canada. He received his B.S.A. degree from the University of Guelph (O.A.C.) in 1950. His civil service career began in 1948 when he worked at the Sault Ste. Marie laboratory as a student assistant on the spruce budworm project. Les obtained his M.Sc. and Ph.D. degrees in entomology from the University of Wisconsin in 1952 and 1955. In 1955, he joined the Forestry Zoology Division, Department of Agriculture at Vernon, B.C. and began his long, productive career as a research scientist in forest entomology. In 1956, Les moved to Victoria where he worked at the Pacific Forest Research Centre until his retirement.

The main thrust of Les' research concerned the population biology and management of bark beetles and the sitka spruce weevil. His contributions to forest entomology and forestry are outstanding examples of translating results of in-depth research into practical application. Perhaps the highlights of his career were classic works on the roles of intraspecific competition and host selection in the dynamics of Douglas-fir beetle populations. Information gained from these and other related works resulted in the development of the Douglas-fir beetle clauses which are incorporated into timber sale licenses and proved highly effective in reducing losses from the Douglas-fir beetle over the past 20 years.

In addition to his scientific work, Les has contributed significantly to entomology research at the PFRC by serving as Section Head in the period 1965-1968 and to the scientific community through his active interest in the Western Forest Insect Work Conference and the Entomological Societies of Canada and British Columbia.

During the past few years, Les devoted much effort to his long-standing interests in photography of wild flowers and salmon enhancement and certainly enjoyed catching his fair share of fish. Les was a devoted family man. He is survived by his wife Iris and two daughters. He is sorely missed by his family and many friends and his passing is a great loss to forest entomology.

L. Safranyik and I. Otvos

Dr. W. Jan. A. Volney, Adjunct Professor in Entomology, University of Alberta

Dr. W. Jan. A. Volney (B.Sc.F. [New Brunswick], M.S.F. [Yale], Ph.D. [SUNY College of Environmental Science and Forestry], M.A. [New Brunswick] has been appointed Adjunct Professor in the Department of Entomology, University of Alberta.

Jan is employed as a Research Scientist with Forestry Canada at the Northern Forestry Center in Edmonton. He is Leader of the "Forest Insect and Disease Management Systems" project. Jan's research interests include impacts of forest insects on tree and stand growth, population biology of Northern American *Choristoneura* spp., and development of forest pest management systems. Jan is also involved with the application of quantitative methods to biological systems.

As an Adjunct Professor, he is willing to co-supervise graduate students working on Population Biology of Forest Insects, Quantitative Methods Applications, and Forest Pest Management Systems.

NEWS OF ORGANIZATIONS/NOUVELLES DES ORGANISATIONS

Entomological Society of Saskatchewan - News

The 37th Annual Meeting of the Entomological Society of Saskatchewan was held on October 26-27, 1989 in the Conference Room of the Agriculture Canada Research Station, Saskatoon, Saskatchewan. The theme of the meeting, "Amateur Entomology", was highlighted by two presentations: one, on amateur collectors by John Kozial (see p. 34 of this *Bulletin*) and the other by Alfred P. Arthur, on collecting insect stamps. Twelve other scientific papers were presented including one by the current President of the Entomological Society of Canada, Jeremy McNeil, entitled, "*Dealing with Habitat Deterioration: The Tale of Two Moths*". The best student paper was given by Will E. Fick of the Department of Biology, University of Saskatchewan.

Kozial brought his collection of insects to the meeting and placed it on display. It is one of the largest private collections of insects in the province even though its contents are limited to the Lepidoptera and Coleoptera. The collector, the collection and the Entomological Society of Saskatchewan received good TV coverage from the CTV Network in the province. Because of the relevance of Kozial's address, not only to the theme of the meeting but also to the current status of entomology in Canada, it is presented herewith in its entirety.

P.W. Riegert

Regina, Saskatchewan

H.R. MacCarthy Lecture Fund

The H.R. MacCarthy Lecture Committee, representing associations and institutions with activities in the field of pest management, has established the H.R. MacCarthy Endowment Fund at Simon Fraser University and the University of British Columbia. The lecture will alternate between Simon Fraser University and the University of British Columbia and be given by an invited, distinguished scientist active in the field.

Dr. H.R. MacCarthy began his career in 1948 as a student assistant in the Field Crop Insect Laboratory at Kamloops, B.C. He received a B.A. from the University of British Columbia in 1950 and a Ph.D. from the University of California at Berkeley in 1953. He was named Head of the Entomology Section of the Vancouver Research Station in 1959. During his career, he made significant contributions to a program that resulted in almost complete control of the spread of potato leaf roll virus in the province. After 26 years of service with Agriculture Canada, Dr. MacCarthy went on to teaching in the Master of Pest Management program at Simon Fraser University. He has had an important influence on the careers of many students in pest management during the last 20 years and is still actively supervising students at Simon Fraser University. He has recently retired as Editor of the *Journal of the Entomological Society of British Columbia* after serving more than 30 years in the position and contributing significantly to the development of an international publication of high standard.

The Lecture Committee is asking that people show their appreciation of Dr. McCarthy's work by making a contribution to the H.R. MacCarthy Endowment Fund. An official receipt will be issued for

tax purposes and individual donations of \$100 and corporate and institutional donations of \$500 will be acknowledged by publication of contributors' names on correspondence and posters in association with each annual lecture.

Please make your cheque payable to :

Simon Fraser University,
H.R. MacCarthy Lecture Fund,
P.O. Box 12094,
555 W. Hastings St.
Vancouver, B.C.
Canada V6B 4N5

Associations and Institutions represented by the H.R. MacCarthy Lecture Committee:
Professional Pest Management Association of British Columbia
Entomological Society of British Columbia
Centre for Pest Management, Simon Fraser University
Faculty of Agricultural Sciences, University of British Columbia
Agriculture Canada Research Station, Vancouver
Association of Professional Biologists of British Columbia

NSERC - Register of Canadians Studying Abroad

When NSERC launched the Register of Canadians Studying Abroad in January 1989, it had two goals in mind: contributing towards the reduction of Canada's brain drain; and assisting Canadian employers looking for highly qualified scientists and engineers.

It is still too early to determine how effective the register will be in helping Canadians to obtain employment in Canada. So far, however, 187 employers have asked to receive information from the data base on a regular basis, and NSERC has produced 127 listings. Of the requests received, 117 have come from the university community (from 44 universities), 58 have been from industry and 12 from government. Initial reactions from employers indicate that they find the listings useful in their recruiting activities.

The Register provides basic information about the students' training and areas of interest to Canadian employers seeking to hire highly qualified scientists and engineers.

To date there are 660 graduate students and postdoctoral fellows in the data base. Of these, 75.7% are studying in the United States and 19.7% in Europe. The distribution by discipline is as follows: 57.2% in the life sciences, 33.1% in the mathematical and physical sciences and 9.7% in engineering.

To obtain more information about the Register contact Eileen Garvey at (613) 995-6010

CRSNG - Nouvelles du Répertoire des Canadiens étudiant à l'étranger

En janvier 1989, le CRSNG a lancé le Répertoire des Canadiens étudiant à l'étranger avec deux objectifs en vue: contribuer à contrer l'exode des cerveaux et aider les employeurs canadiens qui désirent recruter des scientifiques et des ingénieurs hautement qualifiés.

Il est encore trop tôt pour déterminer dans quelle mesure le Répertoire aidera les Canadiens à obtenir un emploi au Canada. Jusqu'à présent, 187 employeurs ont demandé à recevoir des renseigne-

ments de la base données, et le CRSNG a produit 127 listes. Des demandes reçues, 117 proviennent de la communauté universitaire (44 universités), 58 de l'industrie et 12 du gouvernement. Les premières réactions des employeurs indiquent qu'ils trouvent les renseignements utiles pour leurs activités de recrutement.

Le Répertoire fournit des renseignements de base sur la formation et les domaines d'intérêt de l'étudiant aux employeurs canadiens éventuels qui cherchent à recruter des scientifiques et des ingénieurs hautement qualifiés.

À ce jour, 660 étudiants aux cycles supérieurs et boursiers postdoctoraux sont inscrits au Répertoire. De ceux-ci, 75,7% étudient aux États-Unis et 19,7% en Europe. La répartition par discipline est la suivante: 57,2% en sciences biologiques, 33,1% en mathématiques et en sciences physiques et 9,7% en génie.

Pour de plus amples renseignements sur le Répertoire, communiquer avec Eileen Garvey au (613) 995-6010

Directory of Lepidoptera Conservation Projects

The IUCN/Species Survival Commission's Lepidoptera Specialist Group is aware that there are many individuals and groups fostering the conservation of butterflies and moths in many parts of the world. Many of these projects are being undertaken in relative isolation or on a very local scale, and are not widely known elsewhere. Many could perhaps benefit from increased opportunity to exchange information.

We plan to prepare a 'Directory' of Lepidoptera Conservation Projects, including both current projects and those which have been completed but for which results remain in private or unpublished reports. This will include projects such as distribution mapping, butterfly ranching and surveys, as well as taxon-targeted, population-targeted and habitat-related conservation activities in many parts of the world. Both amateur and professional projects are welcome for inclusion and we hope to include a wide representation of current activities in these areas.

Would people please submit details of projects, as follows:

1. Title and objectives of project
2. Specific activities
3. Locality and duration
4. Contact person, with address (+ phone and FAX numbers, if available)
5. Status: current, completed, planned, etc.
6. (A few lines on the project)
7. Funding source and budget (if not confidential)
8. A list of any reports or publications from the project

The information should be sent to:

Dr. T. R. New, Chairman, LSG,
Department of Zoology,
La Trobe University,
Bundoora, Victoria 3083
Australia

before the end of August, 1990. It is hoped that the Directory will be produced within a few months of that deadline. All contributors will receive a gratis copy.

International Commission on Zoological Nomenclature

Applications published in the Bulletin of Zoological Nomenclature

The following applications were published 19 December 1989 in the *Bulletin of Zoological Nomenclature* 46 (4). Comment or advice on these applications is invited for publication in the *Bulletin* and should be sent to the Executive Secretary, I.C.Z.N., British Museum (Natural History), Cromwell Road, London, SW7 5BD, U.K.

Case 2685

***Corisa verticalis* Fieber, 1851 (currently *Trichocorixa verticalis* ; Insecta, Heteroptera): proposed conservation of the specific name.**

Antti Jansson, Zoological Museum, University of Helsinki, P. Rautatiekatu 13, SF-00100, Helsinki, Finland.

Abstract. The purpose of this application is to conserve the specific name of the waterboatman species *Corisa verticalis* Fieber, 1851 by the suppression of the unused senior subjective synonym *Sigara lineata* Fabricius, 1787.

Case 2678

***Curculio viridicollis* Fabricius, 1792 (currently *Phyllobius viridicollis* ; Insecta, Coleoptera): proposed conservation of the specific name, and *Rhyncolus* Germar, 1817: proposed designation of *Curculio ater* Linnaeus, 1758 as the type species.**

R.T. Thompson, Department of Entomology, British Museum (Natural History), Cromwell Road, London, SW7 5BD, U.K.

Abstract. The purpose of this application is to conserve the specific name of the leaf weevil *Phyllobius viridicollis* (Fabricius, 1792). The name is threatened by the hitherto misidentified senior subjective synonym *Curculio cloropus* Linnaeus, 1758. The originally designated type species of *Rhyncolus* Germar, 1817 was based on a previous misidentification of *C. cloropus* and it is proposed that *Curculio ater* Linnaeus, 1758 be formally designated, in accordance with Germar's intention and subsequent usage. Both *viridicollis* and *ater* occur commonly in central and northern Europe.

Case 2676

***Ochthebius* Leach, 1815 (Insecta, Coleoptera): proposed conservation of *Elophorus marinus* Paykull, 1798 as the type species.**

M. Hansen, Department of Entomology, Zoologisk Museum, Universitetsparken 15, DK 2100, København, Denmark.

Abstract. The purpose of this application is to conserve *Elophorus marinus* Paykull, 1798 as the nominal type species of the water beetle genus *Ochthebius* Leach, 1815, since the first type species designation makes the genus a junior subjective synonym of *Hydraena* Kugelann, 1794.

Case 2702

***Culex stigmatosoma* Dyar, 1907 and *C. thriambus* Dyar, 1921 (Insecta, Diptera): proposed conservation of the specific names by suppression of *C. peus* Speiser, 1904.**

Bruce F. Eldridge, Department of Entomology, University of California, Davis, CA, 95616 U.S.A.

Ralph E. Harbach, Walter Reed Biosystematics Unit, Museum Support Center, Smithsonian Institution, Washington, D.C. 20560 U.S.A.

Abstract. The purpose of this application is to stabilize the name of the important American “banded foul-water mosquito” as *Culex stigmatosoma* Dyar, 1907 and also that the species known as *C. thriambus* Dyar, 1921. A strict application of the Code would lead to confusion in the names of both species.

Case 2694

***Exoprosopa* Macquart, 1840 (Insecta, Diptera): proposed confirmation of *Anthrax pandora* Fabricius, 1805 as the type species.**

Neal L. Evenhuis, Gressitt Center for Research in Entomology, Department of Entomology, Bishop Museum, PO Box 19000-A, Honolulu, Hawaii 96918, U.S.A.

David J. Greathead, CAB Institute of Biological Control, Imperial College, Silwood Park, Ascot, Berks. SL5 7TA, U.K.

Abstract. The purpose of this application is the confirmation of *Anthrax pandora* Fabricius, 1805 as the type species of the bombyliid fly genus *Exoprosopa* Macquart, 1840. This is in accordance with general usage; an overlooked designation of *E. audounii* Macquart, 1840 would disturb the meanings of *Exoprosopa* and *Ligyra* Newman, 1841.

Case 2719

***Musca heraclei* Linnaeus, 1758 (Insecta, Diptera): proposed conservation of *heraclei* as the correct spelling of the specific name.**

I.M. White, CAB Institute of Entomology, 56 Queen’s Gate, London SW7 5JR, U.K.

P.R. Seymour, Ministry of Agriculture, Fisheries and Food, Harpenden Laboratory, Hatching Green, Harpenden, Herts. AL5 2BD, U.K.

Abstract. The purpose of this application is to the conservation of the established spelling of the specific name of the celery fly, *Musca heraclei* (Linnaeus, 1758), a pest species. Linnaeus published the name, which is derived from the host plant *Heracleum*, as *heraclii*, but following Fabricius (1784) it has always been spelled *heraclei*.

Biological Survey of Canada (Terrestrial Arthropods) Survey Report

The Scientific Committee met in Ottawa on 19 - 20 October 1989. A fuller account appears in the Spring 1990 issue of the Newsletter of the Biological Survey of Canada (Terrestrial Arthropods).

Notes on Selected Scientific Projects

The following developments were reported.

1. *Arthropods of freshwater springs in Canada*

The proceedings of the 1989 symposium on arthropods of freshwater springs are being edited for publication. An introductory bibliography on springs is in press. A brief about the value of springs for research, and the need for their protection and preservation, is being finalized.

2. *Arthropods of peatlands in Canada*

A symposium on the arthropods of peatlands will now be held in 1991. Active research on several taxa and habitats of interest continues.

3. *Arthropods of Canadian grasslands*

Another edition of the grasslands Newsletter (no. 5) was published after the meeting.

4. *Arthropods of the boreal zone*

Following publication of a scientific review about boreal zone (Danks, H.V. and R.G. Footitt. 1989. Insects of the boreal zone of Canada. *Can. Ent.* 121: 625 - 690), a subcommittee was established to develop specific actions for cooperative study of sucking herbivores and their associates on Jack pine and its relatives.

5. *Arctic invertebrate biology*

Based on the brief recently published on this subject (*Bull. ent. Soc. Can.* 21(3). Suppl.), the Survey continues to consider means to increase studies of arctic invertebrate biology. A special interest group meeting will take place at the 1990 ESC annual meeting.

Other Scientific Priorities

1. *Climatic change*

A workshop on entomology and climatic change has been confirmed for the 1990 ESC Annual Meeting (Banff).

2. *Arthropod fauna of soils*

An article on life in the soil, to appear in *Seasons*, includes the photograph of soil mites used in the information leaflet about the Survey produced in 1989.

Liason and Exchange of Information with other Organizations

1. *National Museum of Natural Sciences*

Dr. A. Emery, Director of the National Museum of Natural Sciences, reported that the Museum has applied for additional funds to support new modules of an expanded Biological Survey dealing with plants and with parasites. The Canadian Botanical Association and parasitology group of the Canadian Society of Zoologists would cooperate in the development of these modules. The position of curator of entomology in the Museum is currently being staffed.

2. *Biosystematics Research Centre*

Dr. R. Trottier, Director, Biosystematics Research Centre, reported that the Centre is undergoing a consultant review of roles and responsibilities of the Centre and its relationships with others. The Plant Gene Resources Unit (seed and clonal collection) will be transferred to BRC's jurisdiction.

3. *Entomological Society of Canada*

Dr. J.N. McNeil, President of the Entomological Society of Canada, reported that the ESC continues to be concerned about the state of science in Canada. The Society has chosen to join the Canadian Federation of Biological Sciences, and will push for recognition that there is a need for biosystematics and related work in Canada.

4. *Canadian Society of Zoologists*

Dr. G.G.E. Scudder, President of the Canadian Zoological Society, reported that the Society requested that the Act establishing the new National Museum of Natural Sciences ("the Canadian Museum of Nature") stipulate that the type material held by the museum should be preserved permanently. Dr. Scudder thanked the Committee for inviting to the current meeting as observers, representatives of the parasitology section of the Canadian Society of Zoologists, Dr. M. Adamson and Dr. W. Evans.

5. *Geological Survey of Canada*

Dr. J.V. Matthews, Terrain Sciences Division of the Geological Survey of Canada, reported that the GSC has established an observatory for long-term monitoring on the Fosheim Peninsula, Ellesmere Island.

6. *Inland Waters Directorate*

Dr. D.B. Carlisle, Inland Waters Directorate of Environment Canada, reported that new programmes have been announced by the Department of the Environment, but these are based on the physical, chemical and engineering parameters. There has been a decrease in biological effort.

7. *Canadian Parks Service*

The Committee and Mr. Y. Lafleur, Head, Studies Section, Natural Resources Branch, Canadian Parks Service, discussed the draft of a document written by the Survey to serve as the possible basis of a Memorandum of Agreement between the Survey and the Parks, about entomological research in Parks, especially with regard to long-term research and monitoring. A subcommittee was appointed to continue discussions with Parks.

8. *Other Organizations*

The Survey remains in touch with the Canadian Council on Ecological Areas, the Association of Systematics Collections, The Xerces Society and other bodies.

Other Items

1. *Biological Survey Foundation*

A by-law was passed modifying the objects of the Biological Survey Foundation (a corporation established to prepare and produce publications of the Survey), to facilitate application by the Corporation for charitable status.

2. *Collections Policies*

The Committee established a subcommittee on Collections Policies to prepare a statement about the importance of collections, to serve as the basis for specific suggestions (e.g. disposition of orphaned collections; possible conditions attached to research grants).

3. *Biology and the Environment*

A subcommittee was established to draft a letter to elected representatives pointing out that inadequate attention is being paid to the biological aspects of environmental concerns.

3. *Other Matters*

The Committee also discussed publicity for the illustrated keys to myriapods published by the Survey, membership of the Committee, studies on arthropod ectoparasites of vertebrates and a recent workshop and planned symposium on Systematics and Entomology and other items.

H.V. Danks

Entomology Field Seminars Eagle Hill Wildlife Research Station

Advanced field seminars in entomology are being offered for the fourth year at Eagle Hill Wildlife Research Station, located just "downeast" of Bar Harbor and Schoodic Point on the Maine coast. The station is known for the exceptional advanced study opportunities that it offers for professional and independent field biologists and naturalists. The entomology seminars this year include:

Immature Insects - Dr. Frederick W. Stehr - June 17 - 23. This seminar will involve extensive field observations and collection of specimens for lab work. It will emphasize the acquisition of an ability to recognize families in the field, a working knowledge of the biology of many groups, preservation techniques and techniques for the use of keys.

The Lepidoptera: Biology & Techniques - Dr. Charles Covell - June 24 - 30. This seminar will involve field work and will cover techniques for collection, preparation and identification, including the use of wing venation patterns and genitalia preparations for smaller species.

Forest Entomology: Insect Survey Techniques - Richard Dearborn - July 8 - 14. Participants will learn how to use and evaluate a variety of both general and species specific surveys and how to relate survey results to forest pest problems.

There are other field seminars in botany, ornithology, marine biology, ecology and natural history illustration. Seminars are given by some of the country's leading authorities on natural history. Scholarships are available. For more information, please write to Eagle Hill Wildlife Research Station, Steuben, Maine, U.S.A. 04680 or call 207-546-2821 (evenings preferred).

INBIO - Costa Rica

(Ed. Note: The following stems from the address given by Dan Janzen at the St. John's meeting.)

There are three major and overlapping steps in the conservation of biodiversity:

- Save it
- Determine what you have saved
- Sustainably use for society what you have saved

Costa Rica has saved it - 25% of the country has been conserved for biodiversity in Regional Conservation Units.

Costa Rica has now founded the National Biodiversity Institute - Instituto Nacional de Biodiversidad (INBio) to conduct the national inventory and to facilitate sustainable use of biodiversity. Its first determination task is a 10-year inventory of the entire 500,000 - species fauna and flora of Costa Rica. Its first facilitation task is the formation of partnerships between Costa Rica and the phytochemical industry.

What can you do?

Visit. When you go to Costa Rica, visit the INBio (mailing address: Dr. Rodrigo Gamez, Director, INBio, Apdo. 236-1002, San Jose, Costa Rica; telephone 506-36-42-69; FAX 506-33-06-17) and come to know the curators, the collections and the INBio programs.

Identify. When specimens from INBio cross your desk, or when someone from INBio asks you to come to Costa Rica to work with the team of curators, find it in your heart and program to participate. You are building the first truly tropical national inventory research and reference collection.

Donate things. Look around your lab and your university for idle materials in good working condition that you can donate to the Costa Rican curators and parataxonomists conducting the inventory; insect pins (#3 stainless steel only, please), dissecting microscope lights (fiber optics if at all possible, please), good microscopes, aspirators, scissors, staplers, boxes of new 3.5 inch computer disks, forceps, hand lenses, 5-100 g spring scales, binoculars, 35 mm single-lens reflex cameras, 0.1-400 top-loading electronic balances, Malaise traps, Winkler bags, headlamps, portable light traps, medium-sized to small cardboard boxes (smaller than Schmitt boxes) with heavy foam bottoms for shipping loaned insects, and any arthropod literature in Spanish. Take any of these things with you for direct donation to the INBio when you go to Costa Rica, or send them to Daniel H. Janzen, Department of Biology, University of Pennsylvania, Philadelphia, PA 19104 - he will guarantee their tax-free arrival at the INBio within a few months.

Donate money. The national inventory is Costa Rican curators and parataxonomists, working with international collaborators on their own time, figuring out 500,000 species in ten years. \$8,000 pays the full time annual salary and benefits for a university graduate curator; \$5,000 does the same for a parataxonomist. \$16,000 buys a 10-person 4-wheel drive field vehicle, \$300 buys a 10-drawer steel insect cabinet with drawers, \$35 buys the DC ballast for a blacklight, and \$.03 buys one insect pin.

All donations are for direct inventory costs, with no overhead. Cash or cheque to Janzen arrives almost instantly at the inventory; tax-deductible donations should be a cheque to Guanacoste-INBio, The Nature Conservancy, 1815 N. Lynn Street, Arlington, VA 22209.

HERITAGE/NOTRE PASSÉ

Heritage Lecture Early Entomology in Newfoundland and Labrador

Ray F. Morris
Retired Entomologist
Research Station, Agriculture Canada
St. John's, Newfoundland

It is with very great pleasure I acknowledge the Organizing Committee's invitation to present the Heritage Lecture on this historic occasion. This is the first time that the Entomological Society of Canada has held its annual meeting in this province, and in so doing you are helping us commemorate our 40th Anniversary of Confederation with Canada. We have accommodated the Acadian Entomological Society on several previous occasions but never before have we been privileged to host the National Society. We hope your visit to St. John's will be both profitable and pleasing, and do come and see us again sometime.

Introduction

The Province: Newfoundland, the 16th largest island in the world, with an area of c. 106,000 km², comprises about 30% of the land mass of the Province of Newfoundland and Labrador, Canada's seventh largest province. It represents the easternmost extension of North America and the northern part of the island was the landfall of the first European settlers, the Vikings, about 1000 years ago. (South, 1983).

Although lying in the latitude of northern France, Newfoundland has a climate that is much harsher than that of its European counterpart. It is influenced by the cold, southward flowing Labrador Current, which brings northern ice and icebergs as far south as the Avalon Peninsula well into spring. Although influenced by this cold current, the winter climate on the island remains milder than that of most of mainland Canada. The summers are for the most part short, cool and variable, with a short growing season. Winds are generally strong for most of the year, and fog is a frequent and pervasive feature, especially in the south and southeast.

Geologically, the island is extremely interesting, with visible evidence of the clashing of continents and the formation of the proto-Atlantic Ocean. In the west, there is the northerly extension of the Appalachian Mountain chain, which extends to Alabama. In the centre is a highly complex land form, representative of the proto-Atlantic Ocean bed, and in the east are rocks whose closest relatives are to be found bordering the eastern Atlantic Ocean. The recent geology, however, is one marked by the recent retreat of the glaciers. During the last glaciation, the Wisconsinian, which terminated c. 7000 years ago on the island, most of the soil was eroded away.

It is evident that much of the original fauna and flora were eradicated during the Wisconsinian glaciation. So our present day flora and fauna have arrived through colonization, or via accidental or intentional introductions. Newfoundland lies in the great boreal forest biome, which stretches across much of the near north of Canada. The geographic relationship of Newfoundland and Labrador with the surrounding areas is illustrated by Morris (1980).

Entomology: The first study of Newfoundland insects was made by the wealthy young British naturalist, Joseph Banks, in the 18th century. Banks is best known for accompanying Captain Cook on his voyage around the world from 1768 to 1771, but few people realize that he had made an earlier voyage

of 4 1/2 months to Newfoundland and Labrador in 1766, collecting plants, animals, birds and insects. His collections were recorded in 1971 by Dr. A. M. Lysaght in a book entitled "*Joseph Banks in Newfoundland and Labrador 1766, his diary, manuscripts and collections*". Many of the specimens now in the Banksian cabinets in the Entomology Department of the British Museum lack locality labels and it is possible that some of these could be from Newfoundland, but confirmation of this awaits the inspection of the specimens by someone with experience of the Newfoundland fauna.

Another early pioneer in Newfoundland entomology was the famous and well known British naturalist, Philip Henry Gosse. At the age of 17 he left his home at Poole, southwest England, on the brig *Carbonear*, 22 April 1827, after being hired as a clerk with the firm of Messrs. Harrison, Slade & Co. to serve in their counting-house at the port of Carbonear, Newfoundland. At his mother's insistence he signed an agreement to go out to the American counting house, on a very small salary.

The brig *Carbonear*, on which Philip Gosse sailed away for the New World, was a poor tub of a craft. Her sailing powers were limited and the voyage extended over a period of 46 days because of prevailing westerly winds. However, because of Gosse's rare faculty of observation, he enjoyed so novel a field as the ocean. The future naturalist kept a copious journal of every day happenings and made colour drawings of everything paintable such as: whales spouting; porpoises leaping and plunging, petrels, hagdawns and other birds. Icebergs were also illustrated.

At long last, on the morning of Wednesday, 6 June 1827, Cape St. Francis, Newfoundland, was sighted on the horizon. Philip Gosse admired the many icebergs, particularly as they rolled in the sea and sent waves crashing on the brig. Next morning, Cape St. Francis lay behind them, and the *Carbonear* was bowling along with a fair breeze into beautiful Conception Bay. Philip was surprised by the first sight of the town of Carbonear. With a population of 2,500 in 1827, it was third in size in the colony at the time, exceeded only by St. John's and Harbour Grace. At the time, a fleet of about 70 schooners was in the harbour, preparing to start for Labrador to prosecute the fishery there.

Gosse worked as a clerk at Carbonear for eight years (1827-1835) and during this time he spent his free hours collecting, rearing, pinning and mounting insects. His insect collection was contained in a cabinet which a Captain Hampton brought back from Hamburg, Germany, in 1834. The cabinet was made according to Gosse's specifications and measured 3 ft. high x 3 ft. long x 2 ft. wide and contained 12 drawers and folding doors. He also illustrated and painted nearly all specimens collected, including immature stages.

However, it was nearly 50 years later before information about this collection was brought to the attention of North American entomologists. In 1882, Gosse wrote to William Saunders, Editor of *The Canadian Entomologist*, informing him how he had studied the insects of Carbonear and Carbonear Island very intensively for three years. He advised how he had made careful drawings of nearly every species he found and these had been bound together during the winter of 1835-36 in a book called *Entomologica Terrae Novae*. Gosse felt that American and Canadian entomologists might be interested in the Newfoundland insect fauna and he offered to send Saunders the book. Saunders published the butterflies from Carbonear Island in *The Canadian Entomologist* in 1883.

Unfortunately, he was not interested in the other groups and they were not recorded. However, in 1930, Dr. F. A. Bruton of Somerset, England, published a paper entitled *Philip Henry Gosse's Entomology of Newfoundland*. Bruton describes Gosse's book *Entomologica Terrae Novae* as a small book of 60 to 70 pages containing nearly 250 beautiful hand-painted illustrations of insects, larvae and pupae. Bruton had the insects identified and classified by the British Museum of Natural History and they are listed according to order in his paper.

Entomologica Terrae Novae is now in the National Museum, Ottawa. None of Gosse's specimens are known to exist today. For me, it was thrilling to look through Gosse's book at Ottawa in 1975 and to select one of his paintings, the short-tailed swallowtail, *Papilio brevicauda* Saunders, as a

frontispiece for my book *Butterflies and Moths of Newfoundland - The Macrolepidoptera*. It was hard to believe at the time that such colourful and accurate illustrations were nearly 150 years old.

Gosse's journal for 31 December 1833 closes with the following remarks:

"Another year of my entomological research in Newfoundland has passed away. It has been a pleasant and profitable one; for though I have not been so successful as I anticipated in the capture of insects, I have gained a good stock of valuable scientific information, as well as from books as from my own observations.... Besides the specimens which I have already sent, and those which I have to send to England, I have collected in the different orders as follows:- Coleoptera, 102 species; Hemiptera, 29; Lepidoptera 70 (15 butterflies and 55 moths); Neuroptera, 43; Hymenoptera, 69; and Diptera, 75; making a total of 388 species. I enter upon the coming year with unabated ardour, and with sanguine expectations, trusting that, if I am spared, it will prove still more successful and profitable than the past."

To understand the difficulties under which Philip Gosse laboured at the time, it must be borne in mind that no one in Newfoundland had ever attempted to study its entomology before. There were no museums, no cabinets to refer to for identification in the whole colony and no list of native insects. His only written guide was the highly condensed, intensely technical generic characters out of Linnaeus's *Systema Naturae*, as printed in the article *Entomology* in Tegg's *London Encyclopedia*.

In the autumn of 1834, Philip Henry Gosse and his close friends, Mr. and Mrs. Jaques, turned their eyes towards Upper Canada as a future residence. They had received some exciting accounts of the fertility of regions around Lake Huron, and of the certainty of success being attained in agriculture by emigrants settling there. Also, Gosse felt he had pretty well exhausted the entomology of Newfoundland and considered it a cold, barren, unproductive region. He longed to try a new field. He had unconsciously grown too large a bird for the little nest at Carbonear.

On Midsummer Day, 1835, Philip Gosse took a final farewell of the little town of Carbonear, which had been his home for eight years. He and his two closest friends joined the brig *Camilla* at Harbour Grace and sailed for Upper Canada. Gosse also took on board a variety of chrysalids, caterpillars and eggs. They landed at Quebec City on 19th July but instead of going on to the London district of Canada, some close friends encouraged them to settle in the Eastern Townships. Gosse obtained a partly cleared, 110 acre farm near Compton, Quebec. However he was to find the practical drudgery of farm work very tiresome and after three years he left Quebec for the United States.

During his stay in Canada he continued his entomological studies and made contacts with the Natural History Society of Montreal and the Literary and Historical Society at Quebec. As well, he continued to produce his entomological journals and they are a memorial to his unflagging industry and success in the pursuit of science. It was these journals which later formed the basis of his first published volume, *The Canadian Naturalist* of 1840. With the publication of his *Canadian Naturalist*, Gosse ceased to be merely an entomologist and became a naturalist in a broader and fuller sense, and this satisfied his wider ambitions. While at Compton, Gosse taught school for three months during the winter, and also contributed papers to the *Transactions* of both Societies mentioned earlier.

Gosse left Quebec in March 1838 and eventually arrived in Mobile, Alabama, after an arduous trip by horse and wagon and steamer. The only piece of valuable property which he took with him was his tightly stocked insect cabinet. He obtained employment as a master for a school at Dallas, Alabama. Gosse found the area surrounding Mount Pleasant, where he lived, an excellent centre for entomologizing and a marvelous haunt for butterflies. Here he produced his still unpublished quarto volume entitled *Entomologica Alabamensis*, containing 233 figures of insects, exquisitely drawn and coloured,

the delightful amusement of his leisure hours in the schoolhouse and at home. In late December 1838, Gosse left Dallas to return to Mobile, Alabama, where he had to stay a week waiting for a ship, before proceeding to Liverpool, England. He was never to set foot on the American continent again. During the five week passage he worked hard and finished the manuscript of his *Canadian Naturalist*.

Before leaving Mobile, he found his poor shattered insect cabinet from Canada lying in a warehouse in a shocking condition, but with the contents not so hopelessly destroyed as he feared. It was pleasant to gaze on his captures, after not knowing their whereabouts for so long. Unfortunately, he found that after paying his passage to England, he was even poorer than when he had left Canada. On arrival at Liverpool, Gosse sold his entomological collection, for a fair sum, to a well known insect buyer - Mr. Mellby. He also hastily parted with his twenty specimens of the skins of rare birds and a few fur pelts.

On 7 June 1839, Gosse left Liverpool and moved on to London, where he hoped to secure a living by teaching the art of flower-painting. Fortunately, he met a friend, Mr. Thomas Bell, a dentist, naturalist and a member of the Royal Society. Bell made arrangements for Gosse to submit his manuscript, *The Canadian Naturalist*, to Mr. Van. Voorst, a distinguished publisher of scientific works. By this time, Gosse was destitute, living in a dingy attic and surviving on one meal a day. Finally, Mr. Van Voorst's answer was given - "I like your book; I shall be pleased to publish it; I will give you one hundred guineas for it." Gosse was so overcome he broke down and cried and Van Voorst had to fetch the wine. Under these circumstances, a bond of business friendship was sealed between John Van Voorst and Philip Henry Gosse, which held them together for nearly fifty years without a single misunderstanding or even monetary disagreement.

On 29 February 1840, *The Canadian Naturalist* was published, the first of a long series of Gosse's works. It was very favourably received and sold firmly, though rather slowly. The written text consisted of a series of conversations between an imaginary father and son, during successive walks, taken at the various seasons of the year. The book was adorned with a large number of illustrations, engraved in a very refined and finished manner on blocks drawn and designed, in most cases, by the author himself. With *The Canadian Naturalist*, Gosse opened up a new field of literature.

Gosse foresaw his function as one who was calling his contemporaries out of their cabinets and their dissecting-rooms into the woods and onto the seashore to observe the living heart of nature. The moment was one in which, throughout the world, a fresher air was being blown across the fields of biology and natural history. The characteristics that made Gosse one of the most popular and useful writers of his time are to be found in *The Canadian Naturalist*, e.g. the picturesque enthusiasm, the scrupulous attention to detail, the quick eye and the responsive brain, the happy gift in direct description.

In the spring of 1843, Gosse received a contract to produce an *Introduction to Zoology* from the Society for Promoting Christian Knowledge. He worked very hard during the following year and produced two volumes of the *Introduction to Zoology*, for which he received £170. To prepare these volumes, Gosse spent a great deal of time at the Natural History Department of the British Museum where he made many valuable friendships, including Edward Newman and Edward and Henry Doubleday. It was through the Doubledays that Gosse became a contributor to the *Proceedings of the Royal Society*. The first of many papers contributed was a *Note on an Electric Centipede*, published in 1843.

From this time onwards, Gosse was to travel widely and produce an extraordinary number of very diverse publications. Following 18 months in Jamaica, during 1844-46, he published a book on the birds of that island in 1847 followed by publication ranging from *Monuments of Ancient Egypt* (1847) to a *Text Book for Zoology in School*, 1851; *Kew Gardens - A Guide Book*, 1854; *Romance of Natural History*, 1860; *A Year at the Shore*, 1865; *The Great Atlas Moth of India*, 1879; *The Rotifera*, 1886.

In 1881, while in his 71st year, Philip Henry Gosse submitted his manuscript entitled *The Clasping Organs Ancillary to Generation in Certain Groups of Lepidoptera*, accompanied by nearly 200 figures

exquisitely drawn under the microscope, to the Royal Society for publication in the *Proceedings*. They considered it too expensive to reproduce because of the many illustrations; however, they did contribute £50 to the Linnean Society for its publication in their *Transactions* in 1883. Gosse, because of his strong religious beliefs, made it a practice in advanced life to qualify every public expression of his views on natural phenomena by an attribution of the beautiful or wonderful condition to the wisdom of the Divine Creator. He had done so in the above mentioned manuscript by appending a paragraph embodying those pious reflections. Rightly or wrongly, these sentiments appeared to the Council of the Linnean Society to be out of place in a very abstruse description of certain organs, which are curious, but neither beautiful nor calculated to inspire ideas of a particular elevating nature. In returning the proof of his memoir, the Secretary was directed to ask the author, while making some other trifling changes, to be kind enough to put his pen through this little passage also. To the surprise of everyone concerned, Gosse absolutely declined to do this. This placed the Council in a most embarrassing position. A great deal of money had already been spent, and here was a paragraph which could not be printed, because the rules of the Linnean Society forbade all contentious matter on the subject of religion. The impasse was cleverly resolved by impressing upon Mr. Gosse that if an atheist should wish, in future, to defend his atheism in the *Transactions* of the Society, the Council could scarcely forbid him to do so, if it had yielded to a Christian writer the privilege of defending his faith in Christianity. Gosse saw the force of the argument and gave way, though with great unwillingness.

In all walks of life, the freshness of Gosse's new mode of observation met with instant appreciation, nor were zoologists less forward than the general reader in commending this new novelty of attitude. Charles Darwin and Richard Owen were among those who expressed their approval of this bright, fresh and electrifying mode of throwing the window of the dissecting-closet wide open to the light and air. Philip Gosse's style was scarcely affected by any other external influences than those which had come across his path in his early youth in Newfoundland. It was Gosse's function to take the public to the edge of the great tidal pools, and let them gaze down for themselves upon the miraculous animal and vegetative beauty that waved and fluttered there. In doing this, he was immensely aided by his own invention of the aquarium, which was instantly accepted by naturalists and amateurs alike. To some it became a portable studio of biology, to others a charming and fashionable toy. Even *Punch* reflected the sudden popularity of Gosse's invention.

On 22 August 1888, in his 79th year, Philip Henry Gosse died in his sleep at Sandhurst and was buried in the family plot at Torquay, England (E. Gosse, 1890).

Shortly after Gosse's visit to Newfoundland, Norwegian naturalist, Peter Stuwitz, was sent to Newfoundland in 1839 by the Swedish-Norwegian Government and he stayed at St. John's until his death in 1842. Although his main task was to investigate the fishing industry, he found time to collect insects as he travelled around the island. These insects were sent back to Norway and are still preserved at the Zoological Museum in Oslo. They are labelled "Newfoundland, P. Stuwitz", but unfortunately the localities are not included.

The North American literature on Newfoundland insects is very limited. Early partial lists were recorded by Bates (1875) and Edwards (1883), and early collecting records for Labrador were given by Moschler (1860), Packard (1868, 1888 and 1891) and Scudder (1875 and 1895). Most of these entomological works in the earlier days were in the collecting and classification of insects. Contributions by Lindroth (1955 and 1957) and Korgerus (1954) to an understanding of the insect fauna of insular Newfoundland is also acknowledged.

The first native born Newfoundland entomologist was H.A. Butler. Graduating from Macdonald College in 1921, Butler was Deputy Minister of Agriculture for Newfoundland from 1931 to 1934, and then from 1937 to 1949, when Newfoundland was governed by a Commission, he was Insect Control Officer. It was during this latter period that "H.A." developed his great interest in entomology. While seeking

advice on methods and materials to control vegetable, household and forest insect pests, he made many contacts with officials of the Entomology Division of CDA in Ottawa.

In 1949, when Newfoundland became Canada's tenth province, "H. A." organized the Field Crop Insect Laboratory at St. John's and was appointed Officer-in-Charge, a position he held until he retired in 1957.

Although "H. A." published very few scientific papers during his wide and varied career, he made a major contribution in entomological extension throughout the province. In addition, he obtained and distributed throughout Newfoundland several millions of parasites to combat such important forest pests as the European spruce sawfly, the spruce budworm, the larch sawfly, and the satin moth. He also introduced a bacterial disease that helped to combat a serious infestation of the hemlock looper.

I started working with "H. A." in 1950 and remember him best for his theories on the probability that insect larvae become airborne in southern areas, then are carried aloft by wind storms, and literally fall out over Newfoundland. He has reported larval fall-outs on several occasions and had even found larvae in fishing boats anchored off-shore. When I offered a possible explanation or an alternative solution, he would retaliate by saying "But how do you explain that one time, as I walked along Water Street in St. John's, larvae actually fell from the sky and landed on my hat?"

A silvicultural forest research unit at St. John's was established by the Federal Government in 1949, with a summer field station for forest insect and disease research being established at Georges Lake, Western Newfoundland, in 1950 and 1951. During this period, research on insects and diseases was initiated by Joe Carrol and Bill Parrot, and in 1953 they assumed responsibility for the Insect and Disease Survey. In 1952, the field station became a year-round operation, with permanent forest entomology and pathology units being established at Corner Brook. Accommodations at Corner Brook were provided by Bowaters until a new laboratory was constructed in 1956. In 1966, the two federal forestry research units in Newfoundland were amalgamated to form the Forest Research Centre at St. John's, and the Corner Brook laboratory was closed. Pardy (1974) published a register of Newfoundland and Labrador insect specimens in the Centre's museum.

Before closing, I must acknowledge that in Labrador, many members of the Moravian Mission, which operated stations at Okak, Hopedale, Hebron, Ramah, Makkivik, Nain, Nutak, and Cartwright have collected insects from time to time. Probably the most important naturalist was Rev. W.W. Perrett. Not only was he an outstanding missionary who worked among the Eskimos and settlers of Labrador for 45 years, but he had a great interest in nature. He collected many moths and other insects as he strolled around the gardens at Hopedale and other settlements in the evenings. Many of these insects, collected between 1918 and 1936 are now in the Canadian National Collection or in the Royal Ontario Museum in Toronto.

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PUBLICATIONS

Book Reviews

Paulian, R. 1988. *Biologie des Coléoptères*. Editions Lechevalier, Paris. 719 pp. 595 FF.

La publication exponentielle d'articles et d'ouvrages consacrés à l'entomologie au cours des dernières années amplifie le besoin d'ouvrages de synthèse à l'usage de ceux qui n'ont pas accès à une bibliothèque spécialisée. La somme des connaissances actuelles est tellement considérable que peu de personnes peuvent en offrir une synthèse générale. Renaud Paulian, avec sa *Biologie des Coléoptères*, a relevé de défi de façon magistrale et les quileques lignes qui suivent se veulent un parcours rapide de l'oeuvre.

Le volume se divise en deux grandes parties, la première traitant de l'organisation et du comportement des coléoptères, la deuxième du peuplement de la terre. Dans ce genre d'ouvrage, le premier chapitre est consacré, comme il se doit, à une revue générale de la morphologie externe et interne. Je trouve particulièrement bien réussie la synthèse concernant l'appareil génital mâle ou femelle, deux vastes sujets qui ont fait l'objet de nombreuses publications depuis les vingt-cinq dernières années.

L'auteur passe ensuite en revue les différentes familles de Coléoptères en suivant un cadre systématique généralement accepté, mais en assignant, ici et là, à certains groupes, un rang plus ou moins élevé dans le système taxonomique traditionnel; il élève, par exemple, les Dynastinae (Scarabaeidae) au rang de famille, alors que ceux-ci sont généralement considérés comme sous-famille des Scarabaeidae. Ceci n'enlève rien à la valeur de la classification proposée, puisqu'il n'existe aucune définition objective du groupe "famille". De plus, on n'y trouve pas de données morphologiques comme on pourrait s'y attendre, mais consiste plutôt une évaluation de l'importance relative des familles, de leur repartition, ou de leur biologie, etc.

Le chapitre 3 traite de la respiration, de la circulation, de la nutrition et de l'excrétion, le chapitre 4 des fonctions sensorielles et de l'action des facteurs physiques extérieurs, le chapitre 5 de la locomotion, le chapitre 6 du rythme et des cycles d'activité. Le chapitre 7 propose de nombreux cas de dimorphisme sexuel et expose les facettes variées de la sexualité et de la reproduction. Le chapitre 8 discute de la ponte et des soins donnés aux oeufs et aux larves. Le chapitre 9, consacré au développement postembryonnaire (oeuf, larve et nymphe), m'a semblé bien court en regard de l'importance du sujet. Cette "faiblesse" reflète bien la situation actuelle de la coléoptérologie mondiale où les stades de développement, a donné naissance à nouvelle approche taxonomique remarquablement stable et équilibrée. En ce domaine, les coléoptérologistes sont encore loin du compte et tout reste à faire. La première partie s'achève par le chapitre sur les dispositifs offensifs, défensifs et protecteurs.

Un survol rapide des premiers coléoptères (fossiles) sert d'introduction à la deuxième partie, la plus originale et la plus intéressante du livre. L'auteur passe en revue les grands habitats terrestres (arides, salés, humides, souterrains, hautes montagnes), aquatiques (eaux douces, domaine marin), du milieu végétale (plante hôte, relations avec les divers groupes botaniques, utilisation des diverses parties de plantes) et enfin du milieu animal (vertébrés, mollusques et vers, commensalisme, parasitisme, coléoptères anthrophiles, coléoptères hospitaliers). Les exemples empruntés aux Scarabaeidae sont nombreux, reflète l'intérêt particulier de l'auteur pour cette famille, mais les autres groupes ne sont pas négligés pour autant. L'ouvrage s'achève sur le captivant chapitre des termitophiles et des myrmécophiles, deux groupes de Coléoptères aux moeurs et à la morphologie parfois très étranges.

Les coquilles typographiques sont assez nombreuses au début du livre, mais heureusement leur nombre va en décroissant. Même si l'ouvrage représente une masse considérable d'information, certains chapitres ont été couverts trop rapidement à mon goût, notamment celui sur les larves et nymphes, comme

je le soulignais plus haut. D'autres lecteurs seront frustrés que l'auteur n'ait pas ajouté la date après la citation des travaux d'auteurs. Cette pratique allège sûrement le texte, mais elle a pour inconvénient de rendre la recherche bibliographique pénible, notamment pour les auteurs très prolifiques cités plusieurs fois. En outre, on aurait dû s'assurer que toutes les références du texte soient présentes dans la bibliographie. Dommage qu'on ait pu se permettre l'ajout de quelques planches couleurs!

Malgré tout, ces quelques remarques négatives apparaissent négligeables en comparaison de l'envergure de l'ouvrage. Toutes mes félicitations à l'auteur en espérant que d'autres entomologistes s'inspireront d'un tel exemple d'excellence. L'entomologie ne pourra se développer et s'épanouir en langue française que grâce à des porte-parole d'un tel niveau. Alors, à qui le tour.

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Nichols, S.A. (compiler) and R.T. Schuh (Managing Editor). 1989. *The Torre-Bueno Glossary of Entomology* (a revised edition of *A Glossary of Entomology* by J.R. de la Torre Bueno). Published by the New York Entomological Society in cooperation with the American Museum of Natural History, New York, NY pp. i-840. Available from New York Entomological Society, c/o Dept. of Entomology, American Museum of Natural History, New York, NY 10024-5192 U.S.A. Hard cover. \$(US)40.00 (members of the NYES); \$(US)45.00(non-members).

There is no way that a one volume glossary could ever include even most of the entomological terms coined over the years. As an example, in recognizing a personal bias, I offer *corpus paracardiacum*, first proposed by Casal in 1949 for the *corpus cardiacum*, pharyngeal bodies, or aortic bodies of other authors. The term *paracardiaca* for these bodies seems more appropriate, because their connection with the heart is entirely secondary, but it is not in this glossary. But so what? The term never did come into general use and, thus, probably should not be included. The authors state in the Introduction that this volume includes definitions for terms that reflect usage, more than personal preference. Good show, I say. A comprehensive glossary, which this volume does not pretend to be, would consist of many volumes and the final cost would be out of reach to all but well-funded libraries. This volume is intended for the desk (or backpack) of the working entomologist. The primary sources for the glossary are general entomological text books and glossaries, with a substantial number of terms taken from the primary literature. It includes definitions ranging from the archaic to the current and it incorporates extensive, and very useful, cross referencing. The glossary contains approximately 16,000 terms (the original 1937 edition had ca. 8500 entries) and includes G.S. Tulloch's "Supplement A", published in 1960. There are 18 pages of references to principal and additional sources, non-English language glossaries, sources to English common names of insects and other source books. The type is easy on the eyes and each entry is set in boldface.

The glossary will be of special interest to morphologists, ethologists, systematists, physiologists, pathologists and applied microbiologists and will be useful to anyone preparing a report or a manuscript for publication. The authors mention that there are no established rules of conduct for the world of terminology and so disputes are settled by "he who barks the loudest or who has the most clout". This is a good volume; it should have lots of clout.

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Dugdale, J.S. 1988. *Lepidoptera - annotated catalogue, and keys to family-group taxa*. Fauna of New Zealand, no. 14. Science Information Publishing Centre, DSIR, Wellington, New Zealand. 262 pp. \$(U.S.)48.50.

This volume in the Fauna of New Zealand series is primarily a catalogue of the 1761 species of Lepidoptera that occur in New Zealand. As a catalogue, it is very thorough. In addition to the information expected in such a work, such as references to original descriptions, original combinations of species, type locality, and repository of primary types, it also includes label data for many of the primary types, and the work is based on examination of virtually all primary types to ensure correct placement of the species and accurate synonymy.

The most attractive aspect of the book, particularly for non-New Zealand entomologists, are features that are additional to the catalogue. These include a reference section of more than 700 literature citations, keys to family-group taxa that are supported by 138 line drawings of structural characters used in the keys, discussions of the zoogeographic affinities of the New Zealand fauna, and overviews of Lepidoptera classification. The Lepidoptera fauna of New Zealand is largely endemic at the species level. Discussions of the composition of the fauna and table of geographic affinities by family list approximately 90% of the fauna as endemic to New Zealand. Of the remaining 10%, about 4% were introduced by man and 6% are long distance migrants that are widely distributed in Southeast Asia. A brief discussion of the relationships of the fauna indicates that the majority of the New Zealand Lepidoptera fauna had its origins in Southeast Asia or in the South Pacific islands with few groups showing any promise of having distributions affected by plate tectonics.

The high quality of both the catalogue and the supplementary sections make this volume indispensable to Lepidopterists with an interest in the fauna of New Zealand. Biogeographers with an interest in the South Pacific will also find this work a very useful addition to their libraries.

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Donner, H. and C. Wilkinson. 1989. *Nepticulidae (Insecta: Lepidoptera)*. Fauna of New Zealand, no. 16. DSIR Publishing, Wellington, N. Z.. 88 pages, 102 figures, 27 maps. Soft cover, \$(U.S.)22.95.

The most welcomed series on the insect fauna of New Zealand continues with a report of the leaf-mining moths of the family Nepticulidae. Twenty-eight species are recognized in the fauna, half of them new. All species are members of the cosmopolitan genus *Stigmella*, and all except the parthenogenetic *S. microtheriella* Stainton from England are endemic. Although the high rate of endemism in this family for New Zealand is expected, the absence of more primitive genera similar to the interesting Australian genus *Pectinivalva* Scoble, or even representatives of the widespread *Ectoedemia*, comes as a rather unexpected disappointment. It is possible that such taxa simply remain to be discovered in this typically poorly collected family. According to the authors all New Zealand Nepticulidae, with the exception of the introduced *S. microtheriella*, are closely related and may have evolved from a common stock.

The introduction provides a good background to the study of Nepticulidae. Included are sections on history, which review the pioneering efforts of E. Meyrick, G. V. Hudson, M. N. Watt, and A. Philpott, as well as a brief review of fossil mine evidence gleaned from the examination of over 2000 New Zealand leaf fossils. A biological synopsis emphasizing identification features is also presented along with useful sections on collecting, rearing, and specimen/slide preparation.

The species key is subdivided into separate keys to males and females. Each species is fully described and, when known, a brief summary of its biology is provided. Of the 28 recognized species,

the hosts of 20 are known, with the hosts of three others suspect, thus leaving only five species with no known hosts. In contrast to the holarctic nepticulid fauna, most New Zealand *Stigmella* mine on Asteraceae, with eight species associated with various species of *Olearia*. An appendix to foodplants, arranged according to both insect and host species, is provided at the end of the text.

The text is well supported by 27 distributional maps and 102 line drawings of adults and genitalia, the latter being treated for the first time in the case of 26 species. Pages 65 and 66 as well as 75 and 76, containing figures 73 to 78 and maps 1 to 4 respectively, were missing from the first copy I examined. Fortunately, this appears to be an exception for I am now in possession of a complete copy thanks to John Dugdale and Cleveland Duval of New Zealand. They further inform me that any defective copies can be exchanged if forwarded to Mr. C.T. Duval, DSIR Plant Protection, Private Bag, Auckland, New Zealand. Users of this reference should also note that figure 90 (female genitalia of *S. progama*) appears out of sequence, occurring on page 69 adjacent to figure 86.

This publication should be of interest to anyone concerned with the systematics of Microlepidoptera and/or the biology of leaf-mining Lepidoptera. As is true for any faunal report involving New Zealand, the information contained in this revision of the Nepticulidae should also interest students of biogeography.

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Naumann, I.D. 1988. *Ambositrinae* (Insecta: Hymenoptera: Dispriidae). Fauna of New Zealand, no. 15. DSIR Publishing, Wellington, New Zealand. 166 pp. Soft cover, US \$39.95.

The ambositrine wasps (Proctotrupeoidea, Diapriidae) are a group of parasitic Hymenoptera of presumed disjunct-austral origin. Ian Naumann (CSIRO, Canberra) is the principal monographer of this group; in 1982 he treated the Australian species (*Austr. J. Zool. Suppl.* ser. 85: 239 pp.) and in 1987 the species of Melanesia (*Inv. Tax.* 1: 439-471). The treatment of the New Zealand fauna of the Ambositrinae culminates this triad.

The Ambositrinae is Volume 15 in the Fauna of New Zealand series. Naumann's contribution is truly pioneering; of 35 species recognized 33 are described as new to science. In addition, three new genera are proposed and four genera redescribed. Wing polymorphism as well as considerable sexual dimorphism in most species made the task exceptionally difficult. Thanks to large material and careful study of specimens (so typical for Naumann) the resulting classification appears to be most satisfactory. The keys are clear and well-structured, the descriptions and diagnoses salient and consistent. A large number of illustrations and SEM micrographs of exceptional quality supplement the keys and descriptions. Extensive discussion on biogeography and relationships of the New Zealand taxa summarize the author's views and concepts. Distribution maps (22 pp.) seem to be somewhat of a luxury at this moment when faunal exploration of NZ fauna of parasitic wasps is only in its elementary phase.

With 80 pages of text, 275 illustrations, 161 SEM micrographs and 22 pages of maps, Naumann's treatment of NZ Ambositrinae is an indispensable research tool for future students. This truly excellent publication deserves the attention of both amateurs and professionals.

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Soos, A. and L. Papp (Eds). 1988. *Catalogue of Palaearctic Diptera, Vol. 8 Syrphidae - Conopidae*. Elsevier Science Publ., Amsterdam and New York. 363 pp. Hard cover, Dfl. 395.00/ \$(U.S.) 208.00.

A catalogue of a large family for a major geographic region is always to be welcomed: in the present case there is more than usual reason for doing so. The Syrphidae, which take up most of the volume, are of importance as predators of Homoptera and other insects and as pollinators of many cultivated and wild plants. Catalogues of Palaearctic Diptera families are sometimes particularly welcome; this is definitely true of the Syrphidae. The last treatment of the Palaearctic species was published some 60 years ago and was neither complete nor thorough. About 600 species have been described since that time. Because the region is so large and major collections so many, few revisions or keys contain all the species of the group being treated. The literature is therefore very scattered. The author of the Syrphidae section is to be congratulated on having presented in a very satisfactory format a great deal of information which, despite a few shortcomings, will be of much value to anyone concerned with the family. (My comments are restricted to the Syrphidae, by L.V. Peck (220 pp.); I do not wish to slight the sections on Pipunculidae by V.N. Tanasijtskuk (15 pp.) and on Conopidae by M. Chvala and K.G.V. Smith (28 pp.) but my knowledge of these two families is too limited to make comment worthwhile).

The subfamily classification of the Syrphidae is that now generally adopted - Syrphinae, Milesiinae and Microdontinae are recognized (a great improvement, in my opinion, over the 22 subfamilies recognized by Shiraki). The tribes of Syrphinae could, in my opinion, be emended - I would include Chrysotoxini in Syrphini, and, on the basis of aedeagal structure, divide Bacchini between Syrphini (*Allobaccha* and *Pseudodoros*) and Melanostomatini (*Baccha*). The tribe Pipizini is included as usual in the Milesiinae rather than in the Syrphinae; the relationships of the tribe are still disputed. The tribal classification of the rest of the Milesiinae (with a total of 12 tribes) is reasonable although I think further study will lead to changes. I have noted only one undoubtedly incorrect placement of a genus - *Pleskeola sibirica* Stackelberg, 1924, of which I have seen the type, is here referred to the *Eristalina* but undoubtedly belongs to the Helophilina (and possibly to *Parhelophilus*).

The distribution data, except for the U.S.S.R., are given by countries or sometimes by their subdivisions, except for common species where the distribution is outlined. The latter form of presentation seems to be rather erratic and is not always explicit. The distribution of *Xanthogramma citrofasciatum* is given as: Europe: from S,Sf to E,BG...(Sweden, Finland to Spain, Bulgaria); whether it occurs in Ireland and/or Great Britain is not clear. The U.S.S.R. is divided into nine regions, and some of these are sometimes subdivided. Extralimital distribution (Oriental, Nearctic, Australia, etc.) is given as well. Distribution records for many areas are undoubtedly from the literature so should be treated with reasonable caution. This use of literature records is unavoidable in a work of this scope; records for as many as 17 European countries and all nine divisions of the U.S.S.R. are given for some species. Type localities are given in as much detail as possible; this is useful and has not been done in most of the recent major Diptera catalogues. I was pleased to see that lectotype designations were cited, as these are often difficult to locate. But I found the list was very incomplete - only nine are listed, all in the Syrphinae, but I quickly found 22 more in five papers by Andersson, Goeldlin and Vockeroth published between 1970 and 1976. Surprisingly, of all designations in one of these papers seven are cited and four are not. It is a pity that the 1982 paper by Thompson, Vockeroth and Speight with lectotype designations for 34 Linnaean species was not included. The end of 1982 is given (on p. 5) as the date by which the manuscript was to be completed. Eight papers are cited for that year, two for the next and one for 1984; all but one of the 11 were published in eastern Europe. It is unfortunate that publication was so long delayed after completion of the manuscript.

Treatment of the many species described by Matsumura from Japan between 1916 and 1931 seems

erratic. Of those referred to *Metasyrphus*, 25 are listed as valid and three as synonyms; of those referred to *Syrphus* one is listed as valid, 22 as synonyms, and two as doubtful. This may be correct but it would be easier to believe if the author had published an account of Matsumura's species; and no reference to such a paper is given. It seems to me unlikely that in the case of *Metasyrphus* s.str. 24 of the 50 Palaearctic species occur only in Japan and Sakhalin. One other comment on Matsumura's names will be made - five are synonymized with *Sphaerophoria contigua* Macquart, a Nearctic species recorded from Japan (as *S. cylindrica* (Say)) by Bezzi and Stein in their Palaearctic catalogue of 1907 and by Shiraki in 1930, but which has not been clearly shown to occur in the Palaearctic Region.

Sphecomyia vittata (Wiedemann), 1830 is in a similar situation. The name has been used for a Palaearctic species but the original description was clearly of the eastern Nearctic species. I know of no other author who has recognized two Palaearctic species. The name should be deleted.

One unfortunate omission from this catalogue, as from the other volumes of the series, is the lack of indication of new combination or new synonymy. Clear indication of both is recommended by the International Rules for the benefit of recording journals (and therefore of taxonomists). I am not sufficiently familiar with the literature (especially that of the U.S.S.R.) to be sure that either new combinations or new synonyms occur in the catalogue, but with a moderate number of names proposed by Violovitsh, and many of those of Matsumura, listed in synonymy, and with many of the Matsumura species of *Metasyrphus* originally described in *Syrphus*, I think it likely that both do occur.

Misprints seem to be very few; I have noticed none likely to cause confusion. Two dates are obviously incorrect - on p. 159 *nebrodesius* Rondoni should be dated 1869 and on p. 212 *stackelbergi* Violovitsh should have the date 1957. On p. 82 the specific name originally spelt as *St. Maurizii* by Becker, is spelled *sanktmaurizii*; according to Article 3ld of the International Code, and the following example, the spelling should be *sanktmaurizii*.

My most serious criticism is that an inexplicable number of names have been omitted. During the preparation of this review, I noticed that the name *Pipiza geniculata* Curtis, 1837 (a nominal species for which a lectotype has been designated by Goeldin) was omitted. A few minutes with the catalogue mentioned above produced many additions to the list of omitted names:

Musca pinastri Deeger, 1776

Musca erratica Viller, 1789

Scaeva annularis Curtis, 1837

Ascia bipunctata Curtis, 1837

Chrysogaster varipes Curtis, 1837

Syrphus rosae Hennecke, 1845

There may be reason to query the inclusion in the Syrphidae of some species originally described in *Musca*, especially if they were listed with a query by Bezzi and Stein as were two names published by Muller in 1764, but this argument can scarcely apply to the five species of Curtis and Hennecke mentioned above, all of which were originally, and almost certainly correctly, referred to the Syrphidae. One might think the author had a bias against the names of Curtis were it not that many are included.

An omission of another kind is of a reference to a paper by J.W. Boyes and colleagues. Five papers on syrphid chromosomes are cited, but a sixth, an extensive treatment of chromosomes of Eristalinae (=Milesiinae and Microdontinae) published in 1980, is omitted.

The present catalogue gives the third significant new or nearly new list of Palaearctic Syrphidae published in this century. The first was by Bezzi and Stein, 1907, in Vol. 3, *Katalog der Paläarktischen Diptera*, edited Th. Becker et al. (included, I think without change, in the world catalogue - *Catalogus Dipteriorum*, Vol. 7, by C. Kertész, 1910). The second was in the treatment of the family by Sack in *Die*

Fliegen der paläarktischen Region, ed. E. Lindner, 1928-1932. These publications, with the present catalogue, give an indication of the increase in knowledge (at least at the lowest taxonomic level) of the Palaearctic Syrphidae during this period. The number of genera and species, and of recognized species in some of the larger genera whose limits have remained essentially unchanged, is as follows:

	Bezzi and Stein, 1907	Sack, 1928-32	Peck, 1988
Genera	63	78	120
Species	661	788	1590
<i>Cheilosia</i>	141	150	288
<i>Merodon</i>	49	66	94
<i>Eumerus</i>	42	56	139
<i>Chrysotoxum</i>	19	29	69
<i>Platychirus</i>	18	20	48
<i>Paragus</i>	17	14	28

The greatest proportional increase in species number in recent years has been in the genera *Pipizella* and *Baccha*. Of 36 species of the former listed by Peck 30 have been described since 1951 by 10 authors from many parts of Europe and Asia; it seems likely that the genus does have many species. I have some doubt that the situation in *Baccha* is the same. Of 16 species 12 were described in 1976 by one author, almost all from eastern Siberia and Japan; it will be interesting to see if later workers confirm the existence of so many species.

The last nearly complete list of Palaearctic Syrphidae was that of Sack (*loc. cit.*). This work was issued in fascicles over more than four years so no precise starting point for additions can be determined, but I have arbitrarily selected the beginning of 1931. Since 1930 the number of new species described from various countries or regions is as follows: U.S.S.R., 313; Europe west of U.S.S.R., including Atlantic islands, 120; Japan, 98; China, 24; other (North Africa, other countries of Asia), 41. By decades the figures are: 1931-40, 61; 1941-50, 38; 1951-60, 122; 1961-70, 131; 1971-80, 200; 1981-82, 44. The last two figures indicate that the rate of description of new species has not yet reached a downturn. In particular, the number of undescribed species in China (if not recently extinct) must be very large. Since 1930, four workers have described 65% of the 596 new species - N.A. Violovitsh, 152; A.A. Stackelberg, 111 (plus 24 before 1931); T. Shiraki, 81 (plus 40 before 1931); L.V. Peck, 38.

I will make no comment concerning the price.

J.R. Vockeroth
Biosystematics Research Centre
Ottawa, Ontario

Philip, H. and E. Mengersen. 1989. *Insect Pests of the Prairies*. University of Alberta, Edmonton, pp. v + 122. Soft cover, \$15.00. (Available from the Faculty of Extension, University of Alberta, Edmonton, Alberta, T6G 2E4).

This book is a cooperative venture of the Faculty of Extension, University of Alberta, the Alberta Environment Centre, and Alberta Agriculture, and is an expanded version of Alberta Agriculture's *Insect Pests of Alberta* (1975). Its intended readership includes those in educational institutions and extension agencies, and the public in general.

A brief introduction describes features of the structure, life history and behaviour of insects. The main part of the book deals with the insect pests of different categories of host. The host categories are field crops; small fruits and vegetables; greenhouse and house plants; ornamental trees, shrubs and turf; households; farm-stored grain; and humans and domestic animals. Within each category, the appearance, life history, hosts, damage and non-chemical control of each insect pest is described. Accompanying the description is one photograph of the insect or the characteristic injury. Each pest species appears in only one host category but a host index provides a means of cross reference where an insect attacks hosts in more than one category.

The entomologically naive among the readership would be aided by improved illustrative material. The authors are to be commended for finding one photograph for almost every insect described, but one photograph is not always enough. Pictures of all normally-encountered life stages and typical injury, would help the beginner as would labelled drawings of major structural features of insects, to accompany the introduction to insect biology. The colour reproduction varies from excellent to poor; the illustration of the pea aphid is a photographic equivalent of Picasso's "blue period". Bars depicting actual size, rather than numerical dimensions in the text, would enhance the reader's comprehension of the insect's size.

For a beginner to identify an insect from a known host is a challenge. The host index is not comprehensive, and the organization of text within host categories is unusual. Pests are grouped taxonomically by orders, which are arranged alphabetically by scientific name; thus arachnid and crustacean orders are interspersed among Insecta. Within each order, the arrangement is alphabetical by common name, so the congeneric army cutworm and the redbacked cutworm are separated by seven intervening Lepidoptera. Insects of a given crop may also be widely separated; canola pests appear in three different host category sections spanning 44 pages.

There are a number of minor errors in the text. For example, fall cankerworm larvae do not go through five or six instars, and recent evidence does not support the statement that armyworm larvae may overwinter in Prairie soils.

Compared with the *Insect Pests of Alberta*, the number of photographs per pest is sharply reduced, but the number of species is almost doubled. The book retains an Albertan perspective and several insect pests important in the eastern Prairies are missing. This is most evident in the sections dealing with horticultural and ornamental hosts. Omissions include the potato flea beetle (*Epitrix cucumeris* (Harris)), the strawberry weevil (*Anthonomus signatus* Say), and the ash plant bug (*Tropidosteptes amoenum* (Reuter)), all of which are frequent targets of control measures in Manitoba.

With the exception of its forerunner, there has been no illustrated guide for gardeners, extension agents, farmers or students whose concern is Prairie insect pests, and whose entomological expertise is limited. This publication improves upon the previous status quo. At \$15, it is a worthwhile investment for anyone interested in the pest insects of the Prairies, be they professional entomologists or others.

N.J. Holliday
Department of Entomology
University of Manitoba

Books Available

Memoirs of the Entomological Society of Canada

The following is a list of Memoirs of the ESC that have recently become or will soon be available:

No. 147 (31 August 1989): World review and keys to genera of the subfamily Inostemmatine with reassignment of the taxa to the Platygastriinae and Sceliotrachelinae (Hymenoptera: Platygastriinae) - Lubomir Masner and Lars Huggert.

No. 148 (2 November 1989): Classification and evolution of the eumenine was genus *Symmorphus* Wesmael (Hymenoptera: Vespidae) - Jeffrey M. Cumming.

No. 149 (2 November 1989): Phylogeny and classification of the Eupelminae with a revision of the world genera of Calosotinae and Metapelmatinae (Hymenoptera: Chalcidoidea) - G.A.P. Gibson.

No. 150 (2 November 1989): A revision of the genus *Hoplandria* Kraatz of America north of Mexico (Coleoptera: Staphylinidae, Aleocharinae). - Francois Genier

No. 151 (to be published in 1990): Guide to the Geometridae of Canada (Lepidoptera). VI. Subfamily Larentiinae. I. Revision of the genus *Eupithecia*. - K.B. Bolte.

No. 152 (to be published in 1990): The cephalic structures and spiracles of final-instar larvae of the Family Aphidiidae. - Thelma Finlayson.

International Code of Zoological Nomenclature

The Code (3rd edition, 1985) contains the definitive rules for the application of zoological names. It is an indispensable working tool for all taxonomists in pure or applied zoology and palaeontology. The Code, with English and French text on facing pages, is published by the International Trust for Zoological Nomenclature. 338 pp. Hard cover.

Price £19.00 or \$US 35.00 (postage included). Send payment to:
International Trust for Zoological Nomenclature
Natural History Museum
Cromwell Road
London SW7 5BD, U.K.

Journal Exchange

I recently received a letter from Ken Pivnick (Ag. Can., Saskatoon) with a good suggestion about old issues of *The Canadian Entomologist* and *Memoirs*. A portion his letter reads as follows:

“Every year entomologists move, retire or leave the profession and decide to dispose of back issues of *Can.Ent.* At the same time, many others enter the profession or might otherwise like to acquire back issues of *Can. Ent.* How about making a call for old issues that are unwanted once per year? Any responses received could be printed in the following issue. In fact, the call could include unwanted entomological literature generally. I think this could provide a very useful service.”

Consider it done! If anyone has a store of old issues of *The Canadian Entomologist*, *Memoirs* or any other entomological literature that they would like to recyle, send me your name and address and a list of the material you have. I'll publish this information in the next issue and anyone interested in back issues can contact you.

Ron Aiken,
Sackville, N.B.

European Centre for Pollution Research

International Journal of Environmental Technology and Policy Research

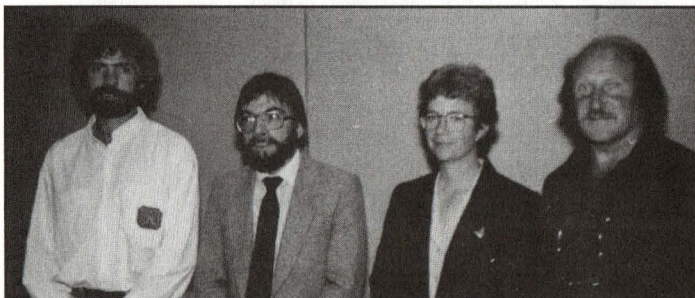
The European Centre for Pollution Research (ECPR) is a comparatively new independent organization established to 1) conduct research aimed at developing effective waste minimization and clean-up technologies, delineating the effects of pollutants on the aquatic, atmospheric and terrestrial environments and developing policy criteria for effective pollution control; 2) developing and furthering multi-national graduate educational programs in the environmental sciences and engineering; and 3) implementing effective public awareness programs through publications, seminars and conferences.

In accordance with its third objective, the ECPR is launching a refereed journal entitled the *International Journal of Environmental Technology and Policy Research*. This journal aims at providing an international forum for the discussion and reporting on technologies and policy issues relating to environmental pollution and its prevention. The journal will consist of state-of-the-art review and refereed papers, technical notes, conference reports, book reviews, letters to the Editor and news and briefs. You are encouraged to submit manuscripts to:

Dr. T.M.Keinath, American Editor
International Journal of Environmental Technology and Policy Research
Department of Environmental Systems Engineering,
Clemson University
Clemson, S.C.
U.S.A. 29634-0919

PHOTOS

ESC Annual Meeting, St. John's, Newfoundland



New members of the ESC Governing Board (l to r): D. Quiring (SEQ), R. West, Secretary, L. Gilkeson(ESBC), R. Ring (2nd Vice-President)



Jeremy McNeil (Incoming President) receiving the gavel of office from Doug Eidt (President)



Doug Eidt receiving a commemorative plaque from Jeremy McNeil



Doug Eidt presenting the Society's Gold Medal to J.P.M. Mackauer



Doug Eidt presenting the Society's Hewitt Award to S. Marshall



H. MacAuslane and F. Hunter - winners of the 1989 Student Paper Competition



Doug Eidt presenting an ESC Postgraduate Scholarship to Greg Pohl



Jean Hollebhone presenting an ESC Postgraduate Scholarship to Heather Jane Dewar



Paul Riegert(l) and Ed Becker(r) - the only ESC members who hold Ph.D.'s from the University of Illinois and consistently wear bow ties.

Entomological Society of Saskatchewan - Annual Meeting, 1989



Members in attendance (l to r): P. Kusters, P. Mason, B. Neill, M. Erlandson, D. Peschken, M. Bido-chka, C. Hinks, O. Olfert, P. Harris, P. Eckstein, W. Fick, G. Miranpuri, M. Braun, K. Moore, R. Weiss, A. Ewen, A. Arthur, M. Atton. In front: J. McNeil and J. Kozial



John Kozial delivering the invitation address "Bitten by the collecting bug"



Will Fick receiving the "Best Student Paper" award from D. Peschken

SCHOLARSHIPS AND GRANTS/BOURSES D'ÉTUDES ET SUBVENTIONS

Entomological Society of Canada

Postgraduate Awards 1990

Invitation for Applications

The Entomological Society of Canada will offer two postgraduate awards of \$2,000 each to assist students beginning graduate study and research leading to an advance degree in entomology. The awards will be made on the basis of high scholastic achievement.

Eligibility - The successful applicants must be either Candian citizens or landed immigrants with Bachelor's degrees from Canadian universities. Applicants must begin their first year of postgraduate studies between 15 June 1989 and 31 December 1990. The studies and research must be carried out at a Canadian university. Each award is conditional upon certification by the Department Head that successful applicants have been accepted into the first year of a program of study and research for an advanced degree with full graduate status. A student who was unable to gain admission or enters graduate school as a qualifying candidate is not eligible to receive an award.

Method of Application - Applicants should submit a properly completed form, with support documents, in accordance with the instructions printed on the application form. Applications must be received by the Secretary of the Society no later than **15 June 1990**.

Process of Selection and Award Presentation - Applications will be reviewed by a committee of the Society and announcement of the two winners will be made at the annual meeting of the Society and each winner will receive a certificate. Payment of the award will be made in October, 1990.

Regulations

Earnings from Other Sources - Award holders are permitted, under normal circumstances, to demonstrate, instruct or assist in non-degree related research for a maximum of 200 hours per annum, provided that the Head of their Department considers it desirable and that it does not hinder the progress of their studies. Apart from these assistantships, award holders will devoted their full time to study and research and will not undertake any paid work during the school term. They may hold other awards and scholarships.

Transfers - Awards are made on the condition that the winners engage in a program of graduate studies and research for an advanced degree in entomology in Canada. Students, who after receiving the award, wish to change their graduate program or transfer to a foreign university may be asked to decline the award. Any change in the course of study, department or university in which an award winner is registered requires prior approval of the Scholarship Committee. A request for permission to transfer must be supported by statements from Heads of Departments.

Additional Allowances - The award stipends are all-inclusive. There is no provision for additional grants by the Society for any purpose. Additional grants, for example, to attend meetings, pay course fees, meet publications costs, etc., will not, under any circumstances, be authorized.

All communications regarding the awards, including requests for applications, should be addressed to:

Dr. R. West, ESC Secretary,
Newfoundland Forestry Centre,
P.O. Box 6028,
St. John's, Nfld. A1C 5X8

La Société d'entomologie du Canada

Bourses pour Étudiants Post-Gradués 1990

Avis

La Société d'entomologie du Canada offrira deux bourses d'un montant de \$2,000 chacun pour aider des étudiants entreprenant des études post-graduées et recherches en préparation d'un diplôme supérieur en entomologie. Les bourses seront accordées aux étudiants ou étudiantes en raison des seuls critères de réussite académique.

Eligibilité - Les candidats choisis doivent être citoyens canadiens ou résidents reconnus du Canada avec un baccalauréat d'une université canadienne. Il est aussi obligatoire que les candidats commencent leur première année d'études post-graduées entre 15 juin 1989 et 31 décembre 1990, et que les études et les recherches soient faites à une université canadienne. Chaque bourse ne sera accordée que lorsque le Chef du Département vérifie que les candidats choisis ont été acceptés en première année d'un programme d'études et de recherches en vue d'un diplôme supérieur avec tous les privilèges rattachés au status d'étudiants post-gradués. Un étudiant qui n'a pas pu obtenir son admission à une Ecole de Gradués ou qui s'inscrit en vue de compléter l'obtention de crédits n'est pas éligible pour recevoir une bourse.

Formalités de la demande - Les candidats devront soumettre leur candidature à l'aide du formulaire approprié et y ajouter tous les documents requis sur la formule de demande. Les demandes devront être reçues par le Secrétaire de la Société au plus tard le **15 juin 1990**.

Sélection et présentation de bourses - Le choix sera fait par un comité de la Société et l'annonce des deux candidats choisis se fera à la réunion annuelle de la Société ou ils recevront un certificat. Paiement de la bourse aura lieu en octobre 1990.

Règlements

Autres sources de revenus - Un boursier pourra dans des circonstances normales donner des séances de cours ou de démonstrations jusqu'à un maximum de 200 heures par année pourvu que le chef de son département en exprime le désir et considère que ces tâches additionnelles n'iront pas à l'encontre du progrès de l'étudiant. Sauf pour fins de démonstration et les jours de congé, un boursier devra consacrer tout son temps à l'étude et à ses recherches et n'accepter aucune autre rémunération, mais pourra jouir d'une autre bourse ou d'un prix.

Transferts - Une bourse est accordée pour poursuivre des études du 2^e ou 3^e cycles conduisant à l'obtention d'un degré en entomologie au Canada. Les boursiers qui décideront de changer d'orientation pour d'autres disciplines que l'entomologie ou de transférer à une université hors du Canada peuvent se voir retirer leur bourse. Après acceptation d'une bourse, tout changement dans le programme d'études ou déplacement vers une autre université devra recevoir un préalable d'approbation du Comité de la Bourse de la SEC. Une telle demande doit être accompagnée de documents provenant de Chefs de Départements concernés.

Frais supplémentaires - Une bourse consiste en un montant total. Il n'y a pas d'autres formes de prix accordés par la Société. Des frais supplémentaires pour assister, par exemple, aux réunions scientifiques, ou pour frais de cours, publications, etc., ne sont autorisés pour aucune raison.

Toute correspondance relative aux bourses et toutes demandes pour formulaires doivent être adressée à:

Dr. R. West, secrétaire SEC,
Newfoundland Forestry Centre,
P.O. Box 6028,
St. John's, Nfld. A1C 5X8

Arctic Institute of North America

Jennifer Robinson Memorial Scholarship

The fourth award of the Jennifer Robinson Memorial Scholarship will be made in September 1990. This scholarship is currently valued at \$5,000 and is awarded to a graduate student in northern biology who best exemplifies the qualities of scholarship that the late Jennifer Robinson brought to her studies at the Institute's Kluane Lake Research Station. All applicants must submit:

- a brief (no more than two pages) statement of research objectives,
- three reference letters,
- a complete curriculum vitae with transcripts and
- a list of current sources of research funding including scholarships, grants and bursaries.

The scholarship committee looks for evidence of northern relevance and a commitment to field-oriented research. **Applications must reach the Executive Director by 1 May 1990.**

Lorraine Allison Scholarship

The Arctic Institute of North America is pleased to announce the second annual competition for the Lorraine Allison Scholarship in 1990. The Scholarship is open to any student enrolled at a Canadian university in a program of graduate study related to northern issues, whose application best addresses:

- academic excellence
- a demonstrated commitment to northern Canadian research
- desire for research results to be beneficial to northerners, especially native northerners.

Scholars from the Yukon and Northwest Territories are encouraged to apply. All applicants must submit:

- a two-page description of the northern studies program and relevant projects being undertaken,
- three reference letters from the applicant's current or past professors,
- a complete curriculum vitae
- a copy of the applicant's most current academic transcript and
- a list of current sources of research funding including scholarships, grants and bursaries.

The current annual value of the scholarship is \$1,500. The scholarship is for one year with a possibility of renewal following receipt and reapplication. The selection committee will notify the winning applicant in July 1990. **Applications must reach the Executive Director by 1 May 1990.**

Applications for both these scholarships should be addressed to:

Mr. M. Robinson, Executive Director,
The Arctic Institute of North America,
The University of Calgary,
2500 University Dr., N.W.
Calgary, Alberta T2N 1N4
(403 - 220 - 7516)

POSITIONS AVAILABLE/EMPLOIS DISPONIBLES

Commonwealth Secretariat

Post Title: Adviser, Microbial Pest Control

Duty Station: Bio-Technology Research Unit,
St. Augustine, Trinidad & Tobago

Duration: Two years

Date Required: As soon as possible

Duties: Working in collaboration with the UWI, CAB International, CARDI, CARONI, NIHERST and the Ministry of Food Production, the adviser will be required to:

1. Develop and implement programmes of training and research in microbial pest control.
2. Set up and undertake experiments in the field of microbial pest control.
3. Undertake a limited amount of teaching of undergraduate students.
4. Supervise post-graduate students.
5. Upgrade skills of personnel in agricultural experimental stations in matters relating to microbial pest control.

Experience/Qualifications: Post graduate qualifications in insect pathology and experience in development of microbial pest control capabilities. Teaching experience at the tertiary level is essential.

Contact:

J.W. Knowles, Senior Personnel Officer,
Administrative Division,
Commonwealth Secretariat,
Marlborough House, Pall Mall,
London, SW1Y 5HX
U.K.

Graduate Studies Opportunities

Department of Entomology
University of Alberta, Edmonton, Alberta T6G 2E3

The Department invites applications from people interested in pursuing studies towards an M.Sc. or Ph.D. in the following areas (Faculty member to contact is in parentheses):

Behavioural hydrodynamics of aquatic insects. (D. A. Craig)

Effects of mosquito attack on cattle. (R. H. Gooding, jointly with M. Makarechian of Animal Science)

Genetics of hybrid sterility in tsetse flies. (R. H. Gooding)

Mechanics of sperm transfer and utilization in thrips and semiaquatic bugs. (B. S. Heming)

Population biology of insects feeding on aspen or their natural enemies. (J. R. Spence)

Relationships between feeding behaviour and electrophysiological responses of taste sensilla of the Colorado Potato Beetle. (B. K. Mitchell)

University of Guelph
Department of Environmental Biology

A postdoctoral position is available immediately for research on diapause and cold hardiness of *Trichogramma*, and development of quality controls for mass-produced insects. The position is for one year, but is renewable for up to four years. The successful applicant will participate in an ongoing project to develop mass production techniques for parasitoids, jointly conducted by the Universities of Guelph and Toronto, and funded by the Ontario Premier's Council Technology Fund and CIBA-GEIGY. Starting salary is \$27,000. Please send applications to:

Dr. J.E. Laing
Department of Environmental Biology
University of Guelph
Guelph, Ontario
N1G 2W1
(519) 824-4120, ext. 2136

Upcoming Meetings/Réunions à venir

Forty Second International Symposium on Crop Protection, 8 May 1990, Ghent, Belgium

CONTACT: Dr. ir. D. Degheele, Faculty of Agricultural Sciences, Coupure links 653, B-9000 Ghent, Belgium

CRYO '90 - Fourth International Symposium Invertebrate and Plant Cold-Hardiness, 17 - 23 July 1990, Binghamton, N.Y.

CONTACT: Dr. Kathleen L. Horwath, Center for Cryobiological Research, State University of New York, Binghamton, N.Y., U.S.A. 13901

Australian Entomological Society, Twenty First General Meeting and Scientific Conference, 30 June - 5 July 1990, Canberra, A.C.T.

CONTACT: Dr. Jane Wright, CSIRO Division of Entomology, GPO Box 1700, Canberra, A.C.T. 2601, Australia

Troisième Conférence Internationale des Entomologistes d'Expression Française, 9 - 14 juillet 1990, Gembloux, Belgium.

CONTACT: M. C. Verstraeten, Zoologie générale et appliqué, Faculté des Sciences agronomiques de l'Etat, B-5800 Gembloux, Belgique

Fifth International Working Conference on Stored-Product Protection, 9 - 14 September 1990, Bordeaux, France

CONTACT: Dr. Fleurat-Lessard, INRA, Centre de Recherches de Bordeaux, P.P. 131, 33140 Pont de la Maye, France.

International Congresses of Dipterology

The Second International Congress of Dipterology will be held in Bratislava, Czechoslovakia from 27 Aug. - 1 Sept. 1990. The First Circular (with preregistration form) has been distributed. Canadian dipterists who have not received this circular may obtain copies from Dr. Graham C.D. Griffiths, Department of Entomology, University of Alberta, Edmonton, Alberta T6G 2E3 (403-922-3221). The Secretary of the Congress is Dr. L. Jedlicka, Department of Zoology, Comenius University, Mlynská dolina, CS - 842 15 Bratislava, Czechoslovakia.

Proposals for hosting the Third Congress (1994) may be addressed to Graham Griffiths, Chairman of the Council for International Congresses of Dipterology.

Symposium Announcement

Troubled Waters of the Greenhouse Earth: Climate Change, Water Resources and Freshwater Ecosystems

May 22, 1990
Blacksburg, Virginia

Sponsored by:

National Aeronautics and Space Administration (NASA)

U.S. Environmental Protection Agency (EPA)

North American Benthological Society (NABS)

This symposium will provide a forum for scientists, policy makers, water resource managers, educators, industry officials and conservationists to:

- study the potential for climate change and its consequences for freshwater ecosystems and resources
- determine the state-of-the-art in freshwater science and water resources management and these disciplines relate to climatic change
- discuss possible research initiatives and appropriate strategies for the future

The emphasis of this interdisciplinary symposium will be on potential effects of altered temperature and precipitation patterns. However, a variety of talks will discuss how freshwater systems may drive climate change and how particular types of aquatic systems may be early indicators of climate change.

This symposium will reflect a range of perspectives and priorities. Invited talks will address the climate change, water resources, wetlands, remote sensing, surface water hydrology, arid/intermittent streams, biodiversity and conservation, lakes and large rivers, biogeographic effects, historic reconstruction, terrestrial and aquatic interactions, arctic freshwater ecosystems.

A registration fee of \$15 will be charged to non-NABS members. An edited volume will be published after the symposium. For further information, please contact one of the following:

Dr. Stuart Fisher,
Arizona State University,
Department of Zoology,
Tempe, Arizona U.S.A. 85287
602-965-4734 Fax: 965-2012

Dr. Penny Firth,
Lockheed Engineering and Sciences Co.
600 Maryland Ave., S.W., Suite 600
Washington, D.C., U.S.A. 20024
202-863-5257 Fax: 863-5240

Workshop of Biological Pest Control in Canada

The Alberta Environmental Centre is organizing a workshop on biological control in Canada, to be held in Calgary on 11 - 12 October 1990. It will cover biological control of pests in the broadest sense, including insect pests, weeds and plant diseases. The program will include review papers, a poster session and panel discussions on current issues. We hope to attract a wide attendance including not only researchers but producers, extension staff and decision-makers. The workshop immediately follows the annual meeting of the Entomological Society of Canada in Banff and we invite entomologists interested in biological control to extend their stay in Alberta for a couple of days to attend. For further information, please detach or photocopy the form below, complete and return to Dr. A.S. McClay, Alberta Environment Centre, Bag 4000, Vegreville, Alberta T0B 4L0.

Name _____

Address _____

Telephone (____) _____

Speciality _____

_____ Please send further information

_____ I expect to attend the workshop

_____ I expect to present a poster

Return to Dr. A.S. McClay, Alberta Environment Centre, Bag 4000, Vegreville, Alberta T0B 4L0.

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La Société de protection des plantes du Québec Quebec Society for the Protection of Plants

La Société de protection des plantes du Québec tiendra à l'Hôtel Chateau Mont Ste-Anne, près de Québec, sa 82^e assemblée annuelle les 14 et 15 juin 1990. Le thème sera: **Le Diagnostic des Ennemis des Végétaux: une ouverture sur les technologies nouvelles**. Sept conférenciers du Canada, des États-Unis et d'Europe, quinze affiches et kiosques de démonstration sur les techniques de diagnostic et plus de trente communications scientifiques seront présentés.

The Quebec Society for the Protection of Plants will hold its 82nd annual meeting at the Hotel Chateau Mont Ste-Anne, near Quebec City, on June 14 and 15, 1990. The theme symposium of this annual event will be: **Plant Pest Diagnosis: integrating the new technologies**. Seven speakers will be coming from Canada, the U.S.A. and Europe, fifteen display stands will deal with research works and demonstrations of diagnostic techniques and more than thirty communications in plant protection will be presented.

Les conférenciers du symposium seront:/The symposium speakers will be:

Le diagnostic agricole et forestier au Québec - G. Gilbert, Service de recherche en phytotechnie de Québec (MAPAQ) et L. Innes, Service de la protection contre les insectes et les maladies (MER)

Diagnosis of plant viral diseases by electrophoretic analysis of double-stranded RNA - R.A. Valverde, Department of Plant Pathology and Crop Physiology, Louisiana State University

Système d'identification des plantules de mauvaises herbes par ordinateur (SIPO) - C.J. Bouchard, Service de recherche en phytotechnie de Québec (MAPAQ)

Application des sondes moléculaires pour la détection des bactéries phytopathogènes - R. Hogue, Service de recherche en phytotechnie de Québec (MAPAQ)

Detection of insecticide resistance in insect pests of agricultural crops in Canada - S.A. Turnbull, London Research Centre, Agriculture Canada

Techniques utilisées au GRISP d'Angers pour le diagnostic des maladies bactériennes et réflexions sur l'apport de nouvelles méthodes. - J.F. Chauveau, GRISP Angers, France

Florida Entomological Society

We are pleased to announce the second International Caribbean Conference of Entomology in conjunction with the 1990 Annual Meeting of the Florida Entomological Society. The members of the Entomological Society of Canada are invited to attend and participate in these meetings. The meetings will be held:

August 5 - 9, 1990
Camino Real Hotel,
Cancun, Mexico

For registration fees, forms and other information, please contact:

Secretary, Florida Entomological Society,
P.O. Box 7326,
Winter Haven, Florida
U.S.A. 33883-7326

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