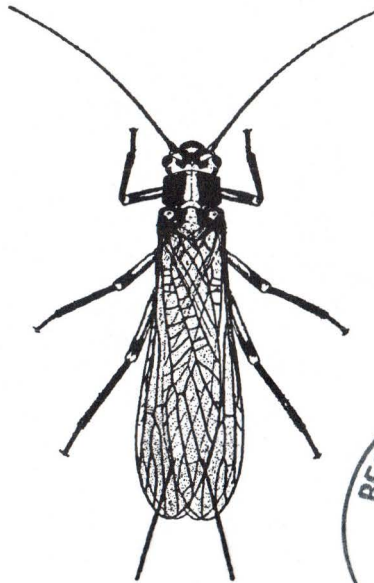

VOL. 23

December - décembre, 1991

No. 4



BULLETIN



ENTOMOLOGICAL SOCIETY OF CANADA
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA

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

VOL 23 (4) - December/décembre, 1991

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EDITOR'S NOTE

This has been a very difficult and time-consuming issue to put together! I would like to thank those of you who sent your submissions on diskette. (Note that I can read both IBM **and** Mac disks!) Most of the Committee Chairs and Representatives failed to send shortened versions of their Annual Reports for inclusion in the *Bulletin*. I apologise if (in shortening them myself) I changed the meaning of any of the reports.

I am planning a series of exciting Guest Editorials and Articles for the upcoming issues. We can look forward to Dr. P.T. Dang's views on *The Canadian National Collection - Past, Present and Future*. President Ring has asked Jill Johnson to submit an article on *The economic returns to Canadian entomological research: an analysis of the costs and risk-reducing benefits*. A brief prepared by Gilles Boiteau *et al.* on the *Status of entomological research on insect transmitted plant diseases* is being edited for inclusion in the March issue.

Several individuals at the Annual Meeting in Montréal promised to send their views on the *Fate of the Biosystematics Research Centre* for publication in the *Bulletin*. (I have received two little snippets so far.) For the sake of Entomology in Canada - please express your views in writing!

Apparently there are now individuals and "anti-net" groups across the country fighting for "insect rights". I have in hand excerpts from *Ontario Insect Collector's News* on this very issue. Please send me information on the insect rights movement in your neighbourhood!

Fiona F. Hunter
Bulletin Editor
Brandon, Manitoba

THE DEADLINE FOR THE NEXT ISSUE (VOL. 24(1)) IS FEBRUARY 1, 1992

LA DATE LIMITE POUR RECEVOIR VOS CONTRIBUTIONS
POUR LE PROCHAIN NUMERO (VOL. 24(1)) EST LE 1 FEBRUAR 1992

Contributions and correspondence regarding the *Bulletin* should be sent to the *Bulletin* Editor. Faites parvenir vos contributions au *Bulletin* ou votre correspondance à l'Editeur du *Bulletin*.

Inquiries about subscriptions and back issues should be sent to the E.S.C. at:
Pour renseignements sur l'abonnement ou les numéros passés, prière de s'adresser à la S.E.C.:

Entomological Society of Canada
393 Winston Ave.
Ottawa, Ontario
K2A 1Y8

SOCIETY BUSINESS / AFFAIRES DE LA SOCIÉTÉ

Student Affairs Committee - Call for Volunteers

Ever felt the desire to become involved in society affairs, but didn't know how? Well, here's your chance! A few enthusiastic individuals are needed to serve on the Student Affairs Committee. If you are interested, let me know. I can be reached by phone (607-255-2096), by E-mail (SU3X@CORNELLA.CIT.CORNELL.EDU), or by regular mail. I'm looking forward to hearing from you.

Kenna MacKenzie
Chair, Student Affairs Committee
Department of Entomology
Comstock Hall
Cornell University
Ithaca, N.Y. 14853-0999

Call for Nominations

Nominations for Second Vice President and Director-at-Large must be signed by three members in good standing and received by 30 April 1992 by the Secretary:

Nominations pour Deuxième Vice Président et Directeur doivent être signée par trois membres de la Société et envoyée avant le 30 avril 1992 au secrétaire:

Dr. Rick West
Forestry Canada, Newfoundland and Labrador Region
P.O.Box 6028
St. John's, Newfoundland A1C 5X8
Fax 709-772-2576

Notice of Executive Council Meeting

The mid-term meeting of the Executive Council will be held in Ottawa in April 1992. Items for consideration at the meeting should be sent to me at the following address:

Dr. Rick West
Forestry Canada, Newfoundland and Labrador Region
P.O.Box 6028
St. John's, Newfoundland A1C 5X8
Fax 709-772-2576

Committees and Representatives

Standing Committees/Comités permanents

Nominations

J. Laing, Guelph (519-824-4120)
+ 2 others

Elections

A.B. Ewen, Chair, Saskatoon (306-975-7080)
R.H. Elliot, Saskatoon
C.H. Craig, Saskatoon
President, *ex officio*

Fellowships/Compagnons

J. McNeil (1994), Chair, Québec (418-656-2999)
A.R. Forbes (1992), Vancouver
V.R. Vickery (1992), Ste-Anne-de-Bellevue
E.E. Lindquist (1993), Ottawa
L. Safranyik (1993), Victoria
S. Marshall (1994), Guelph
President, *ex officio*

Continuing Committees/Comités permanents

Achievement Awards/Pris d'excellence

G. Gerber, Chair, Winnipeg (204-983-1460)
Two members selected by the Chair
President, *ex officio*
First Vice-President, *ex officio*

Annual Meeting/Réunion annuelle

P. Mason, Chair, Saskatoon (306-343-8214)
J. Turgeon, Sault Ste. Marie
P. Fields, Winnipeg

Bilingualism/Bilinguisme

C. Vincent, Chair, St-Jean-sur-Richelieu (514-346-4494)
J. Delisle, Ste-Foy
K. Pivnick, Saskatoon

By-Laws/Règlements

D. Quiring, Chair, Fredericton (506-453-4501)
G. Boivin, St.-Jean-sur-Richelieu
President, *ex officio*

Endangered Species/Espèces menacées

T. Pike, Chair, Calgary, ESA representative (403-220-6791)
S. Cannings, ESBC representative
B. Landry, Ottawa
M. Erlandson, Saskatoon, ESS representative
W.B. Preston, Winnipeg, ESM representative
H. Goulet, Ottawa, ESO representative
M. Guibord, Québec, SEQ representative
A.W. Thomas, Fredericton, AES representative

Finance

G. Gibson, Chair, Ottawa (613-996-1665)
I. Smith, Ottawa
S. Marshall, Guelph
E. Becker, Ottawa
M. Isman, Vancouver
President, *ex officio*
Treasurer, *ex officio*

Heritage/Héritage

R. Riegert, Regina (306-584-4224)
President, *ex officio*

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

E. Belton, Co-Chair, Burnaby (604-420-3181)
D. Eidt, Co-Chair, Fredericton (506-452-3551)
J.S. Kelleher, Cultures list, Ottawa (613-996-1665)
A. McClay, Vegreville, ESA representative
K. Moore, Saskatoon, ESS representative
R. Roughley, Winnipeg, ESM representative
P. Syme, Sault Ste-Marie, (Insect Common Names), ESO representative
J. Kelleher, Ottawa, (Insect Cultures), ESO representative
L. Lesage, SEQ representative
D. Finnamore, Fredericton, AES representative
President, *ex officio*

Membership/Adhésion

A. McClay, Vegreville, Chair (403-632-8207)
D. Raworth, ESBC representative
P. Riegert, Regina, ESS representative
R. Westwood, Winnipeg, ESM representative
J. Turgeon, Sault Ste-Marie, ESO representative
P. Albert, SEQ representative
Y. Pelletier, Fredericton, AES representative
President, *ex officio*

Public Education/Éducation publique

V. Nealis, Co-Chair, Sault Ste-Marie (705-949-9461)
J. Turgeon, Co-Chair, Sault Ste-Marie (705-949-9461)
Regional Directors, *ex officio*
President, *ex officio*

Publications

L. Dosedall (1993), Chair, Vegreville (403-632-8225)
T. Arnason (1992), Ottawa
T. Sahota (1992), Victoria
R. Anderson (1993), Ottawa
S. Smith (1994), Toronto
P. Kevan (1994), Guelph
President, *ex officio*
Scientific Editors, *ex officio*
Bulletin Editor, *ex officio*
Managing Editor, *ex officio*

Scholarships/Bourses d'étude

J. Cunningham, Chair, Sault Ste-Marie (705-949-9461)
L. Safranyik, ESBC representative
A. McClay, Vegreville, ESA representative
B. Chapco, Regina, ESS representative
J. Conroy, Winnipeg, ESM representative
D. Coderre, SEQ representative
W. Seabrook, Fredericton, AES representative
P. Fields, Winnipeg
J. Corrigan, Guelph

Research-Travel Grants/Octrois pour la Recherche-Déplacements

G. Boivin, Chair, St.-Jean-sur-Richelieu (514-346-4494)
T. Shore, Victoria
Members selected by the Chair

Science Policy/Politique scientifique

P. Riegert, Chair, Regina (306-584-4224)
B. Frazer, Vancouver
S. Tobe, Toronto
P. Dixon, Kentville
J.M. Campbell, Ottawa (COPSE)
S. Hill, Ste-Anne-de-Bellevue (COPSE)
G. Gerber, Second Vice-President, *ex officio*
President, *ex officio*

Student Affairs/Les affaires d'étudiants

K. MacKenzie, Chair, Ithaca, N.Y. (607-255-2096)
W. Bowers, St. John's
Y. Carriere, Burnaby
R. Aucoin, Ottawa
M. Winston, Burnaby
President, *ex officio*

Ad Hoc Committees/Comités Ad Hoc

Pest Management Policy/Politique sur la Lutte intégrée

L. Gilkeson, Chair, Victoria (604-387-9410)
S. Hill, Ste-Anne-de-Bellevue
R. Westwood, Winnipeg
+ 2 others

Diseases and Insects of Vegetables/Maladies et Insectes des Légumes

J.A. Garland, Chair for entomology content, Ottawa (613-995-7900)
G. Boivin, St.-Jean-sur-Richelieu
R.P. Jaques, Harrow
L. Thompson, Charlottetown
W. Turnock, Winnipeg
R. Vernon, Vancouver

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

G. Boiteau, Chair, Fredericton (506-452-3260)

L. Chiykowski, Ottawa

C. Cloutier, Québec

M. Sears, Guelph

Headquarters

G. Gibson, Chair, Ottawa (613-996-1665)

D. Bright, Ottawa

R. Footitt, Ottawa

I. Smith, Ottawa

Representatives/Représentants

COPSE

S. Hill, Ste-Anne-de-Bellevue

J.M. Campbell, Ottawa

CFBS

Archives Committee P. Riegert

Board of Governors J. McNeil

Scientific Policy I. Smith

Program Committee J. McNeil and I. Smith

Annual Reports of Executive, Trustees and Committee Members

President's Report

This is the usual time when the President of the Society reports on activities during the past year. Some Presidents have even taken this time to wax eloquently on a favourite topic of interest. Since I usually do not wax very eloquently I will, with few exceptions, stick to Society business. Due to the efforts of a significant number of our members, we have had a very successful year. I would like to present a few of the highlights. Some of these have been mentioned in the Presidential Updates, all of them will appear in the appropriate annual reports of our Trustees and Committees in the *Bulletin*.

Firstly, news of C.F.B.S. (Canadian Federation of Biological Societies). Traditionally, C.F.B.S. has represented laboratory-bound biologists and has concentrated on such activities as animal welfare, and proselytizing on behalf of science for increased funding. Now that C.F.B.S. represents approximately 6,000 biologists across Canada, they can carry out their task of educating our politicians with increased authority -- they are doing so -- and in many cases, the politicians are listening. Most C.F.B.S. recommendations on support, positions and funding for science are accepted by the National Advisory Board for Science and Technology. This is often an uphill struggle, but C.F.B.S. has good credibility and their advice is usually sought by the body politic prior to establishing policy. In a new area for C.F.B.S., we have the development of CLERP (Canadian Long-range Ecological Research Project), which has its origins in the Biological Survey of Terrestrial Arthropods, was developed further by Ian Smith and the executive, then gained support from several other areas, including the Royal Society. The proposal which may determine effects of global change is being refined at this very moment at a meeting

of the Royal Society in Saskatoon, chaired by Geoff Scudder and attended by Ian Smith and Glenn Wiggins. All of this is happening under the umbrella of the Environment Sub-committee of the Science Policy Committee of C.F.B.S. The former was set up to fulfill the needs of the field biologists and is chaired by Ian Smith with yours truly serving as a member. The CLERP project proposes to set up regions or zones across Canada that are unique. Studies of flora and fauna in these zones will be done on a long-term basis and form a data base from which the effects of global change (if there are any) may be deduced. This is an exciting project which, if funded, should involve many of our members. Thus, C.F.B.S. is acting as facilitator and has begun to respond to our needs (within one year of our joining them).

In a closely related area, C.F.B.S. has realized the need for a full-time position in Public Awareness of Science that would ultimately support their efforts in science policy and funding. However, this is a very expensive venture and would necessitate a large increase in fees. Since this is not acceptable at this time, Brock Fenton (Queen's University and a member of the Canadian Society of Zoologists) has proposed that each Society anti up \$1,000 which will be used as seed money to obtain a government grant to support awareness of science. Our Board has agreed to this proposal and has instructed our Public Awareness Committee (chaired by Vince Nealis and Jean Turgeon) to give as much input to Dr. Fenton as possible. (If the grant is not successful, the \$1,000 will be returned to each Society).

In other areas of Society business, last year a survey of our student membership was conducted by Jim Corrigan and his committee on Student Affairs. The results of this survey have been tabulated and several recommendations accepted by the Board or put into place -- namely an E-mail network has been established for students, a student member will be appointed to attend the meeting of the Board of Governors, the Scholarship Committee will be asked to develop new awards for student members and the Student Affairs Committee has been asked to hold a workshop on Job Skills every 3rd or 4th annual meeting.

Within the year, we should have our Standing Rules, and Committee Guidelines translated into French (about time). Our By-Laws already have been translated. This will be on a cost-shared arrangement with the Federal Government.

We are in reasonable financial condition. The upstairs portion of the headquarters building has been rented, thus is generating income that will cover the expenses of the house. Thanks to Gary Gibson and our treasurer, Bob Foottit, the house is well-managed and in good condition.

The membership list is under revision. It is taking a greater effort this time because E-mail and FAX numbers will be added to the list, where available. The results should be much cheaper communication between members, and communication in a national Society is vital. Bob Foottit is overseeing this production which should be completed within a couple of weeks.

The book on *Diseases and Insect Pests of Vegetables* is slowly coming together. Without going into detail, the English version may be a reality by next Spring. The French version a couple of months later. This is a major financial commitment by our Society and the C.P.S. We have reports prepared on the Benefits of Entomological Research (from an economist's viewpoint) and on the needs of insect vector-plant disease research. Summaries of these should appear in future editions of the *Bulletin*.

The list of Common Names of Insects in Canada is being collated by Doug Eidt and Elspeth Belton. Again, we are reaching a point where decisions on its publication will be made.

In other actions, the Board approved \$1,000 for support of the organization of the International Congress of Dipterology to be held in Guelph during 1994 under the chairmanship of Steve Marshall. For several (many) years now, we have not been able to name Fellows to this Society. The Board recommended that a maximum of one Fellow could be named to the Society per year in years when the number of Fellows exceeds 10% of the membership. Meetings are set for 1992 in Saskatoon, 1993 in Sault Ste. Marie, and 1994 in Manitoba. The Student Travel Grants will be incorporated into the Scholarship Fund beginning next year. The list of Insects in Culture has been updated by Jim Kelleher and is available from him.

The pamphlets of the Society on Careers in Entomology and Entomology in Canada have been combined and updated by Vince Nealis and Jean Turgeon, and are in the final stages of production in both languages. They should be ready by December 1991.

Now, as I promised a year ago, I would like to say a few words of comparison between my time as Secretary and that as President. The President's job is easier!

My fingers are a little sticky from being in so many pies at the same time, but the truth is -- Presidents do this for about a year. The workhorses of the Society are the Trustees. Their jobs usually last 3 to many years and they serve this Society as volunteers, extremely well. I would like to thank our Treasurer - Bob Footit, Secretary - Rick West, Scientific Editor - Al Ewen, *Memoirs* Editor - Valerie Behan-Pelletier, and *Bulletin* Editor - Fiona Hunter for their valued contributions to the Society. They put in many hours, often take a lot of criticism yet remain cheerful. Although I am not going to name all of the Chairs and Members of our Committees, you know who many of them are. They have spent considerable time on behalf of the Society and they make things happen. To all of them, my sincere thank you. Needless to say, I have had good support from the Executive and I thank Jeremy, Richard and Paul for this. It has been an interesting (!) year for me as President (and personally). Most of it, I have enjoyed. Some of the events were quite unexpected and occurred when least expected (I'll let Murphy's law untangle that one).

It was a pleasure serving as President and I thank you for that honour.

John E. Laing
Past-President

Treasurer's Report

The Society finished the year 1990 in good financial condition. During 1991 Society finances have continued to be strong although there are increased pressures in the form of our CFBS contributions, the GST and diminished interest rates on our investment accounts. We have had to pay out a number of large printing bills due to an active year with the *Memoirs* series.

The financial operations of the headquarters building have not been a drain on Society finances. Operational expenses such as taxes, heat, etc. have been offset by rental income from the upper floor level. We were even able to purchase an air conditioning unit for our clerk and managing editor! I would like to especially thank Gary Gibson for his help in trouble-shooting headquarters problems. (This includes efforts beyond the call of duty, such as cutting lawns.).

The Scholarship Fund continues to grow. However the Society needs a larger amount of interest income from this fund if we are to increase the amounts and/or number of scholarship awards.

One area of concern is the impending funding of the book on the *Diseases and Insects of Vegetable Crops in Canada*. This project may place considerable pressure on our finances if we have to fund this project from our investment account.

My first year as Treasurer has been busy but very interesting. It has been a pleasure to work with many members of the Society. I would like to thank the Society's clerk, Sandy Devine, for her outstanding efforts and for her patience in training a neophyte Treasurer.

Bob Footitt

Report of the Scientific Editor - *The Canadian Entomologist*

From 1 September 1990 through 31 August 1991, services and supplies for the editorial office have been about \$6295 (i.e., ca \$525 per month). Major expenses have been for word processing (ca. \$4123), postage (ca. \$1032), and telephone (ca. \$1345).

Drs. Judith Myers and Fred Gould have assumed greater roles in administration at their respective institutions and both asked to resign as Associate Editors. They have been replaced by Dr. Sara Rosenthal (USDA, Bozeman, MT) who will be responsible for manuscripts dealing with insect-plant relationships, and Dr. Dan Hare (Univ. California, Riverside, CA) who will handle manuscripts on insect genetics. Dr. Valerie Behan-Pelletier assumed editorship of the *Memoirs* and her place as Associate Editor for taxonomic manuscripts from non-governmental institutions has been taken over by Dr. G.A.P. Gibson (BRC, Ottawa).

From 1 September 1990 through 31 August 1991, 145 manuscripts (including one memoir in 1990) were received. Their disposition was: 18 in review, 30 in revision (A), 1 withdrawn (B), 60 accepted (C), and 36 rejected (D). The rejection rate (calculated as $D+B/A+B+C+D$) was 29%. Almost 80% of manuscripts were returned to authors for revision within 3 months of the submission date, a slight improvement over past years. Most problems arise during the summer months, but some reviewers are a bit tough to deal with at any time of year. Letters are sent to reviewers if manuscripts are out for more than 2 months.

During the first 8 months of 1990, more manuscripts (143) were submitted than during this period in any of the past 5 years. In contrast, during the first 8 months of 1991, 90 manuscripts were received, the fewest received during this period in any of the past 5 years. I have no explanation for this rather drastic decline and would urge all members to consider our journal when they have manuscripts to submit for publication. During 1990, 1281 pages were published in *The Canadian Entomologist* (1141 in 1989). We estimate that 1400 pages will be published in 1991 (927 published pages in the first four issues). Three *Memoirs* (nos. 151 through 153, 414 pages) were published in 1990. I understand that seven *Memoirs* will be published in 1991.

One C.P. Alexander Fund invitation paper has been published in 1991, one (insect pathology) is in revision, and three more (insect-plant relationships, insect physiology, and social insect behaviour) are at various stages of preparation and should be submitted soon.

Translations of titles and abstracts are now being handled by Dr. F. Harper (Université de Montréal) and I have received no complaints about the quality of the translations. Translations of abstracts and titles provided by authors are used as provided. Cost to the Society should be ca \$3000 per year.

As always, my sincere thanks go to the Assistant and Associate Editors; without their help our journals would fail. Special thanks go to Fred Gould and Judith Myers for their many years of service to the Society as Associate Editors. My thanks, too, to Hugh Danks (Chair, Publications Committee) and President Laing for their help and support, and to Barbara Patterson for her devotion to her job and her seemingly endless patience. Once again, thanks to the Society for the privilege of serving as Scientific Editor for another year.

Al B. Ewen

Report of the Scientific Editor - *Memoirs*

I assumed editorial duties for the *Memoirs* as of January 1, 1991. Al Ewen, however, continued as Scientific Editor on all papers submitted to the *Memoirs* during 1990. As of the end of October 1991, three manuscripts have been submitted to the *Memoirs* for publication. Of these, one is in press, and two are in revision. I expect the submission of at least one other manuscript for publication as a *Memoir* before the end of 1991 (Symposium from the ESC Meeting in Banff 1990, edited by G. Ball and H. Danks).

Seven *Memoirs* will appear in 1991 (nos. 154-160), of which three, totalling 497 pages are published. I especially want to thank Al Ewen, Scientific Editor *Can. Ent.* for his guidance and advice this year and for continuing as Editor on all *Memoirs* submitted prior to 1991. My thanks also to the anonymous reviewers who have given their time and expertise, and Barbara Patterson and Sandy Devine for their help.

Valerie Behan-Pelletier

***Bulletin* Editor's Report**

I assumed the Editorship of the *Bulletin* in January 1991 following a crash-course in "Putting the *Bulletin* together" from Ron Aiken. (I am indebted to him for warning me of potential "problems"!) I am generally pleased with the comments that I receive about the *Bulletin*. I attempted to change the *Bulletin* format (slightly) by adding a header on each page (March issue) but was asked by the Publications Committee to delete this in future. Thus far I have had no complaints about the insects appearing on the covers. (I have, however, been questioned about the wing venation on the black fly!) I intend to use a different insect for each issue. Members' submissions of favourite insects are welcomed.

There have been serious problems with getting the *Bulletin* out to members on time. This has been caused by lost (misplaced) mailing labels at the printers, bills not paid to the mailing company (by the printer), and so forth. I am presently looking for a new printer.

Fiona F. Hunter

Nominating Committee Report

For **Second Vice-President**, the candidates put forward by the Nominating Committee were **George Gerber** and **Cedric Gillott**. Their names were published in the spring *Bulletin*. The name of **Peter Harris** was submitted by members of the Society and all three names were placed on the official ballot.

For **Directors-at-Large**, the committee selected **Murray Isman**, **Steve Marshall** and **Jean Turgeon** and these names were published in the spring *Bulletin*. As no further candidates were submitted by members, these three names were placed on the official ballot.

J. McNeil

Elections Committee Report

The committee was comprised of C.H. Craig, R.H. Elliot, and A.B. Ewen. The committee met on 16 July, 1991 at the Agriculture Canada Research Station, Saskatoon, Saskatchewan and examined ballots for the 1991 election of officers. A total of 261 ballots was received. The successful candidates were:

Le comité a compris C.H. Craig, R.H. Elliot, et A.B. Ewen. Le Comité a tenu une réunion le 16 juillet 1991 à la Station de Recherche d'Agriculture Canada à Saskatoon, Saskatchewan, où il a examiné les bulletins de scrutin pour l'élection des officiers pour 1991. Un total de 261 bulletins ont été reçus. Les candidats élus sont:

Second Vice-President/ Le Deuxième vice-président:	George Gerber
Directors-at-Large/ Directeurs nationaux:	Steve Marshall
	Jean Turgeon

A.B. Ewen

Fellowship Committee Report

The guidelines of the Fellowship Committee indicate that the number of Fellows, excluding those who are emeritus and honorary members, does not exceed ten percent of the Active Membership, except in the event of a decrease in the number of Active Members when the stated percentage may be excluded temporarily (Standing Rule I 2a).

The current number of Active Members is 637 and the current total number of Fellows is 87. With 66 of these being non-emeritus, the ESC has in excess of the ten percent limit. Consequently no recommendations were required for 1991.

B.J.R. Philogène

Achievement Awards Committee Report

The Gold Medal Award for 1991 has been awarded to Dr. Roger G.H. Downer of the University of Waterloo. The C. Gordon Hewitt Award for 1991 has been awarded to Dr. Murray B. Isman of the University of British Columbia. The selections were made by the Awards Committee and the candidates were approved by the Governing Board.

P.W. Riegert

1991 Annual Meeting Committee Report

The Committee met several times. In January the program was shown to President Laing and the feedback was positive. Announcements of the meeting were published in the last issues of the *Review of Applied Entomology* (CAB Abstracts) and the April Issue of the *ESA Newsletter*. The first formal announcement appeared in the March issue of the *ESC Bulletin*. In spite of G.S.T., the recession and minor problems due to the postal strike and the strike of Federal Civil Servants, about 140 contributions (symposia, scientific communications and posters) were received. We acknowledged receipt of submissions of Abstracts in September and sent a flyer on "How to get there" to those who submitted an Abstract. Final registration kits were available at the registration desk on Saturday, October 19th, 1991. There was no student paper competition. Our budget was based on an attendance of ca. 260 persons. We received a substantial amount of money from the private sector. The Montreal Insectarium provided a (free) theater for the Heritage lecture on Monday October 21st and paid for the cocktail costs (a value of ca. \$3000).

C. Vincent

1992 Annual Meeting Committee Report

The Entomological Society of Saskatchewan has been planning for the Joint Meeting of the ESS and ESC to be held September 27-30, 1992. The meeting will be held at the Delta/Bessborough Hotel in downtown Saskatoon. Meeting and banquet rooms have been booked and the spouse/companion program is being planned.

The scientific program will feature a plenary symposium on Sustainable Agriculture. Under this theme workshops on *Brassica* Pests, Economic Thresholds, Livestock Entomology and Aquatic Insects are planned. Chairpersons for the workshops have been contacted and have agreed to serve.

J.F. Doane
Regional Director ESS

Bilingualism Committee Report

We received a letter complaining about the poor quality of translation of the Abstracts that appeared in the November-December 1990 issue of *The Canadian Entomologist*. The Abstracts were read by Johanne Deslisle, Conrad Cloutier, Jeremy McNeil and myself. We all concluded that the quality

was poor. Having signed the previous contract, Jeremy McNeil found an acceptable alternative. The person who will now translate the *Can. Ent. Abstracts* is currently translating the Abstracts for the *Can. J. Zool.* with excellent standards.

On March 14, I attended a meeting organized by the Secretary of State at the Delta Inn Hotel in Montréal. Their new program to promote bilingualism among Canadian institutions was explained. The new programs were presented as being more flexible. Funds available for the translation of Abstracts for scientific journals are not available because the essence of the programs is that, after a certain period of time, institutions should function on their own in both official languages. In the meantime, under the new programs, should the ESC wish to translate the Constitution into French, it would have to pay for half the cost of the translation. (Apparently the By-Laws are available in both languages.)

According to Jeremy McNeil, translation of the book on Diseases and Insects of Vegetables is lagging. In my view the ESC has at least two possibilities: (1) The ESC could share the task of translation (and financial risk) by obtaining money (up to \$30,000) from the Secretary of State for a second short-term project; or (2) the ESC could publish the book through a commercial publisher who would assume the financial risk and responsibility for distribution of the French version (e.g., publication by Marcel Broquet who published the French translation of Peterson's *Field Guide of Insects*).

To foster bilingualism in the ESC, special attention was paid during the organization of the Montréal meeting.

C. Vincent

By-laws Committee Report

Several changes to the standing rules and by-laws were requested at the annual board meeting at Banff and are discussed below:

1. Duty 3 of the Research-Travel Grants Committee in the Standing Rules was changed to accommodate the motion by Roitberg (seconded by Laing) on October 6 and is listed below.

Advertises the availability of the Graduate Research-Travel Grants in the September issue of the *Bulletin*. The advertisement will indicate that travel grants are not intended to fund attendance at scientific meetings or visits to the major research sites of the student's thesis project.

2. The changes to Standing Rule IV 2(a) which were approved at the 40th annual general meeting and are listed in the December (1990) *Bulletin* have been carried out.

3. At the board meeting on October 10, McNeil moved and Riegert seconded that the Scholarship Fund be expanded to include that of the Student Travel Awards. During a careful examination of our society's By-laws, Standing Rules and Committee Guidelines, we could not find any reference with respect to date of establishment of the Scholarship Fund or how the money was to be managed and thus no changes in these documents would appear necessary.

D. Quiring

Endangered Species Committee Report

Chairperson, Robert Cannings, resigned in July 1991 in order to pursue doctoral studies at the University of Guelph. Sydney Cannings was appointed interim chairperson. During the past year, Robert Cannings wrote to a number of organizations and agencies outlining the function of the Endangered Species Committee and requesting support for the inclusion of terrestrial invertebrates in their policies and activities:

Committee on the Status of Endangered Wildlife in Canada (COSEWIC) We encouraged this organization to include invertebrate conservation in their deliberations and to establish a subcommittee on the status of terrestrial invertebrates. A letter was received from Bill Munro, Chairperson of COSEWIC, stating that COSEWIC will look at a proposal to include invertebrates in their purview if implications to the member agencies are detailed. The next step is to put forward a detailed proposal that will convince the directors that an active subcommittee will take up the invertebrate cause and that any additional work will be handled by the subcommittee and not draw too much on the resources of COSEWIC as a whole. The ESC Endangered Species Committee is the logical group to draw up such a brief and to act as the nucleus of such a subcommittee.

British Columbia Ministry of Environment A letter was sent to support the inclusion of invertebrates in endangered species legislation being drafted this year. An internal working draft of the legislation, which includes invertebrates, was later reviewed by both Rob and Syd Cannings.

Letters were also sent to the Canadian Nature Federation, the Canadian Wildlife Federation, World Wildlife Fund Canada, the Nature Conservancy of Canada, and the Task Force on a Wildlife Policy for Canada. Of this group, only the Canadian Nature Federation responded, expressing support for our activities, especially the inclusion of invertebrates in COSEWIC.

During the ESC Annual Meeting in Banff (October 1990) some members of the Committee and 1st Vice President Richard Ring met to discuss initiatives. It was agreed that we should:

(a) develop, for each province or region, lists of protected areas, annotated and arranged by strength of protection and by biogeoclimatic zone or other similar habitat classification.

(b) gather copies of relevant provincial legislation on endangered species, to summarize the approaches taken and to recommend content for such legislation in other provinces, or for improvement of current laws.

(c) outline potential research problems and localities where such research can best be performed. The Biological Survey will be approached to help with this effort.

Syd Cannings
Interim Chair
Conservation Data Centre
c/o Wildlife Branch
Ministry of Environment
780 Blanshard St.
Victoria B.C. V8V 1X5

Finance Committee Report for 1991

We have reviewed the proposed budget for 1992 with the Treasurer, and we recommend that the Board approve it, subject to the following observations and qualifications:

1. We note with satisfaction that the operations of the house appear to be financially self-sustaining.
2. We are concerned that involvement of the Society in publication of *Diseases and Insect Pests of Vegetable Crops in Canada* will result in an unmanageable and unacceptable financial burden. In particular, we note that there does not appear to be any clear agreement on the pre- and post-publication financial obligations of the two societies, and consequently, that we lack adequate information to assess the impact of this venture on our finances in a realistic way. Accordingly, we recommend that the Board immediately take steps to secure a contractual agreement with the Canadian Phytopathological Society to clarify the responsibilities of the two societies in this venture, and to ensure that a formal, pre-publication market analysis for the book is conducted. We further recommend that no expenditures on this book be authorized until these steps have been completed.
3. The Executive has asked the Finance Committee to review publication of the *Memoirs*, in consultation with the Editor of the series, Valerie Behan-Pelletier. We will be in a position to undertake a detailed review when the Editor returns from a work transfer in December. However, we note that our scientific publications, *The Canadian Entomologist* and the *Memoirs*, do not appear to present serious budgetary problems for the Society at this time. In 1988, our Committee recommended an annual membership fee of \$100, not including the *Memoirs*. The Board decided instead to implement a two-tier membership plan, with the \$100 category to include the *Memoirs*. During recent years, this has resulted in distribution of a substantial number of *Memoirs* to subscribing members at a small fraction of actual cost. We recommend that the Board move to rectify this situation by increasing the annual fees for members who subscribe to the *Memoirs* to a more realistic amount, such as \$120.
4. We note with concern that the cost of producing and distributing the *Bulletin* now equals the income from memberships. We recommend that the Board investigate ways to reduce these expenditures, particularly mailing costs, to a more appropriate level.
5. We remain concerned about the total cost of the Society's meetings. We intend to review expenditures for this year's meetings, and report our findings to the Executive for consideration.
6. We continue to be deeply concerned about the possible impact of continued affiliation with the CFBS on our Society's membership and finances. We recommend that the Board conduct and publish a comprehensive assessment of the costs and benefits of affiliation with CFBS during 1992. It will be very important for our members to have access to this information when making their decisions regarding future membership options.

I.M. Smith

Heritage Committee Annual Report for 1991

Additional archival material (photos, minutes, etc.) have been received in 1991. None have been transmitted to the Public Archives of Canada because space is not available at present. We have been assured that some material will be accepted early in the new year.

The book *Entomologists of Saskatchewan* was published early in 1991; copies were distributed to members. The last book in the series: *Entomologists of British Columbia*, is at the printers and will be ready for distribution in October 1991.

P.W. Riegert

Insect Common Names and Cultures Committee Report

No proposals for new common names, changes or deletions were received by the ICNCC this year.

The lists of names, sorted by Order and Family from the Species Names database, were distributed for correction to the appropriate taxonomists in Ottawa this February. We were advised to drop the nematode common names and have decided to remove them and also other non-insect and arachnid names from the official list. We also decided that the names of groups of insects need not be published but should be stored and maintained in a Group Names database (information available to ESC members). It has been sent to Larry Speers for the National database.

When the corrections and suggestions to the lists of specific names made by the taxonomists at BRC are ready, Belton and Eidt will discuss them and those agreed upon will then be entered into the Species Names database which will be sent to Larry Speers who we hope can print it before publication in early 1992.

E.M. Belton and D.C. Eidt
Co-chairs ICNCC

Membership Committee Report

During fall 1990, letters were sent to department chairs throughout the country, asking them to identify new students working in the area of Entomology. Individuals so identified who were not already members of the society were contacted by direct mail. Several of these students responded by joining the society. Individuals whose membership lapsed during the last year were contacted by direct mail. Nearly everyone responded by either paying their dues or by explaining why they had left the society.

Updating of our members' address listing is underway. Fax numbers and electronic addresses will be added to the current phone and hard address listings. Bob Footitt is overseeing this task.

Honorary membership nominations were not solicited for 1991. We have reached our legal limit in this category.

B. Roitberg

Public Education Committee Report

Vince Nealis and Jean Turgeon continued as co-chairs of the Public Education Committee for 1990-91. The Committee disbursed \$800 in funds for public education programs in 1991 (ESBC - \$200; SEQ - \$200; ESM - \$400). The \$400 to ESM was for 1989-90 and 1990-91.

At the 1991 meeting, the Executive Council requested that the Public Education Committee review and update the contents of the two brochures entitled: "Entomology in Canada: Career Opportunities" and "Entomology in Canada: the Entomological Society of Canada". These brochures had been available for distribution to the public but stocks were depleted.

The Public Education Committee has reviewed the brochures. Because both brochures contained a substantial amount of similar information, the committee has decided to combine them into one brochure.

The Public Education Committee has also been in close contact with their counterparts in the CFBS in the preparation of a proposal to Science Culture Canada for funding to develop educational packages in science for public schools. The proposal, prepared by M.B. Fenton, was circulated to members of the ESC Board in August by John Laing because of the need for member societies of the CFBS to make a \$1000 promise as "seed" money for the proposal by 1 October. Thirteen of the 14 responses from the ESC board members were positive, most enthusiastically so! Many made constructive comments on the proposal. These comments, along with the commitment to the CFBS, were forwarded to Dr. Fenton in September.

V. Nealis

Publications Committee Report

Members of the Publications Committee (PC) are: R.S. Anderson, J. Arnason, H.V. Danks, L. Dosedall, L. LeSage, T. Sahota. V.M. Behan-Pelletier (Scientific Editor, *Memoirs*), A.B. Ewen (Scientific Editor, *The Canadian Entomologist*), F. Hunter (*Bulletin* Editor), J. Laing (President), and B. Patterson (Managing Editor) are *ex officio* members.

During 1990-91, the Publications Committee dealt with the following items:

1. After a full year's evaluation, the PC recommended that *The Canadian Entomologist* continue to be published only six times per year.
2. In response to a request from the Governing Board, the PC recommended that no Society award for scientific publication be established.
3. In response to a query from the Managing Editor, the PC recommended that reprints from the *Memoirs* should continue to be provided, but that the financial basis of the *Memoirs* series itself should be reviewed.
4. The PC recommended that Society membership be waived for Polish authors participating in the

Poland/Canada Agriculture Cooperative Program.

5. The PC suggested that the general principle that the Society not pay for reviews of scientific manuscripts be confirmed.
6. In response to a request from the Governing Board, the PC determined that ongoing financial support for translation of abstracts for the Society's journals is not available.
7. In response to a suggestion from a member of the Society and from the Editor of *The Canadian Entomologist*, the PC recommended that authors of submissions not be anonymous to reviewers.
8. The PC dealt with 27 books sent for review. Reviews were solicited and submitted for publication in the *Bulletin*. Several book notices were prepared.
9. One application for page-charge waiver was considered and judged eligible for waiver.
10. Assistance was provided to the Scientific Editors concerning the appointment of Associate Editors and other matters.

H. V. Danks

Scholarship Committee Report

The response this year for Postgraduate Awards was outstanding with 17 complete, eligible applications compared to 10 in 1990. The two successful applicants in 1991 were Mr. Eric Lucas and Ms. Heather Anne Higo. Eric obtained his Bachelor's degree in Biology in 1991 at the University of Québec at Montréal and is continuing his studies at the same university. He has enrolled as a Masters student under the supervision of Professor Daniel Coderre. The topic of Eric's research is an assessment of the impact of two species of coccinellid beetles as predators of Colorado potato beetle eggs and larvae and as predators of aphid nymphs and adults. Eric was presented with his award by Professor John Laing at the joint ESC, SEQ and ESO Meeting in Montréal.

Heather Higo graduated with a B.Sc. from Simon Fraser University in 1991 and will continue her studies as a Masters student at the same university under the supervision of Professor Mark Winston. Her research will be on honey bees, more specifically worker response to queen mandibular pheromone with respect to foraging and recruitment behavior. Heather was presented with her award by Professor Richard Ring at the Annual Meeting of the Entomological Society of British Columbia in Summerland in September.

The chairman and members of the Scholarship Committee wish to thank all the applicants who took so much care and effort to prepare their applications and their supervisors for giving recommendations. Selection of the successful candidates was a very difficult decision. We wish all the applicants an exciting and rewarding time during their graduate studies and fulfilling careers in entomology in the years to come.

J.C. Cunningham

Graduate Research-Travel Grants Committee Report

A call for applications for the 1991 competition were published in the *ESC Bulletin* **22**(3): 151-152. Four applications were received, and two awards, each of \$2000, were made. The names of the successful students were published in the *Bulletin* (**23**(2): 76). Arrangements have been made for a cheque presentation ceremony, and a photograph of this to appear in the *Bulletin* in due course. The call for applications for the 1992 competition appeared in the September *Bulletin* (**23**(3): 129-130).

The Committee is somewhat concerned about the preponderance of awards to students of systematics. While it does not wish to discourage systematists, it would like to encourage strong applications from students in all disciplines. Accordingly, during September and October, the chair of the Committee will be writing to the heads of Departments in which graduate student entomologists are likely to be found, and will draw attention, not only to the existence of the awards, but also to the desire of the Committee to receive strong applications from students in all sub-disciplines of Entomology.

N.J. Holliday

Student Affairs Committee Report

The results of the survey of the student members of the Society and recommendations based on these results were presented to the Governing Board at their interim business meeting in April. The Board recommended that a summary of this report be published in the *Bulletin* for the perusal of the membership at large. The survey results and recommendations appeared in the June issue of the *Bulletin* (**23**(2): 71-76), and comments were solicited from the membership concerning the recommendations.

As I am no longer a student and have completed two terms as chair, I will be resigning as chairperson of the Student Affairs Committee. I have been in contact with Kenna MacKenzie, who is currently a member of the Committee, about assuming the chair. She has expressed an interest in doing so, and I heartily recommend her for the position.

J. Corrigan

Pest Management Policy Committee Report

The Committee has produced and circulated a first draft of a document entitled "Pest Management: A Position Paper Prepared by the *ad hoc* Committee on Pest Management Policy of the Entomological Society of Canada". The document was prepared by compiling and integrating submissions from the committee's four members who individually and collectively have expertise in the areas of biological control, resistance management, cultural control and pest management. A member of the committee having expertise in the area of pesticides resigned just prior to the last annual meeting of the Entomological Society and has not yet been replaced by the Science Policy Committee. A second draft of the document is being circulated simultaneously with mailed versions of this report and remains incomplete as there is as of yet no contribution in the area of pesticides and chemical control.

The Science Policy Committee of the Society recently reaffirmed the following statement which is being used as the mission statement of the *ad hoc* committee:

"Our task is to produce a document that represents the Society's views on pest management and how it can be used to limit the change caused by insects to humans and their property or interests. As such, the document should be a reasoned, informed, rational and intelligent view of how pests are and could be controlled. It should set out the components of pest management and review the dangers, limitations and advantages of all available control measures with a view to providing information that will allow the not-yet-informed, incompletely-informed or incorrectly-informed public to determine the utility of any particular approach or combination of approaches. It should also review current major areas of research in order to assist the document in maintaining its timeliness."

In order to accomplish this mission, the Chair recommends that at this juncture in the life of the *ad hoc* Committee, a new chair be appointed, or as a minimum a new member be added, that can bring more immediacy to the Committee's efforts. The document requires a strong input from someone working at the current frontier of pest management.

N. Angerilli
Jakarta, Indonesia

Report on Diseases and Pests of Vegetable Crops in Canada

Notes from a meeting with the CPS Executive Council in Banff on June 22, 1991, were submitted for consideration at the meeting of the ESC Governing Board in Montreal and are summarized below:

1. Merger, review and revision was progressing well in June and is now nearing completion. Without exception, contributions and completed chapters have been reviewed by members of the CPS and ESC steering committees and by others. A list of slides on hand was circulated in June; additions have since been received but there are still some missing items.
2. Budget to date was based on preliminary estimates for 10,000 copies (one-fifth French). Final estimates will be obtained from two, Ottawa-based printers (M.O.M. Printing Ltd. and Runge Press; M.O.M. did the companion volume on diseases of field crops).
3. French translation, to be co-ordinated by Dr. G.B. Ouellette (CPS) with help from Drs M. Caron (CPS) and G. Boivin (ESC), is intended to begin in the New Year.
4. A scientific publication grant (NSERC), status of which was unknown in June, was unsuccessful, as were earlier applications to Science Culture Canada and the Government of Quebec.
5. The joint CPS/ESC Marketing Committee, chaired by Dr. I.R. Evans (CPS), has as its ESC representatives Drs. C.R. Ellis and D.G. Harcourt (appointed by Dr. D.G. Eidt, ESC Past-President). The CPS President Dr. H. Harding has added to this committee since June and he has asked the ESC President to do the same in order for the committee to develop a marketing plan for their completed product and to obtain pre-publication sales.

6. A second promotional flyer was prepared by Dr. I.R. Evans for distribution at the American Phytopathological Society meeting in St. Louis in August, and redone in two languages for distribution at the joint entomological meeting in Montreal.

J.A. Garland

Report of the Entomological Society of British Columbia (ESBC)

The 89th Annual Meeting of the Entomological Society of British Columbia was held on September 12-13, 1990, at the Vancouver Research Station of Agriculture Canada. Fifteen papers were presented, with prizes for the student paper competitions being awarded to Susan Hudak (MSc candidate, James Grant Award), and Tom Lowery (PhD candidate, Harold Madsen Award).

There are presently 115 active members in the Society. A new executive was named at the September, 1990 AGM, with J. Cossentine as incoming President, Hilary Graham as Secretary-Treasurer, R.S. Vernon as Vice-President and Regional Director to the ESC, and G. Judd, J. Troubridge and T. Danyk as new ESBC Directors. Imre Otvos has assumed the position of Editor of *Boreus*, the ESBC newsletter. This position was previously held for ten years by Rob Cannings. The 87th Volume of the *Journal of the Entomological Society of British Columbia* was issued in December, 1990, with 18 submitted papers, and a modification in the binding style of the journal.

With matching financial assistance from the ESC, the ESBC Public Education Committee funded a number of insect-oriented activities at a Montessori school in Vancouver in 1990. This year, the ESBC has committed \$500 to public education, with an additional \$200 contributed by the ESC. The ESBC requested that the ESC consider contributing an additional \$300 to the Public Education Committee to help expand the program. Presently, the committee has solicited seven proposals for 1991-92, amounting to a need of about \$1600. Proposals are evaluated according to four criteria: (1) whether the proposal is aimed at children under 12; (2) whether the proposal includes specific plans for activities or courses; (3) whether the proposal includes itemized requests; and (4) whether the proposed activities are "hands-on". The deadline for 1991 proposals was September 15, 1991.

The second annual H.R. MacCarthy Pest Management Lecture was held on October 1, 1991, at UBC. The invited speaker was Dr. Robert N. Coulson from Texas A&M University. The purpose of the H.R. MacCarthy Pest Management Lecture is to present an annual lecture by a distinguished pest management scientist or practitioner. The Lecture is managed by the H.R. MacCarthy Lecture Committee which consists of representatives from: the ESBC; the Professional Pest Management Association of B.C.; the Centre for Pest Management, Simon Fraser University; and the Faculty of Agricultural Sciences, UBC. It is funded by revenues from the H.R. MacCarthy Endowment Fund held by Simon Fraser University. As of December, 1991, the fund was made self-supporting by a matching grant of \$12,000 from the B.C. government.

The 90th Annual Meeting of the Entomological Society of British Columbia was held on September 22-23, 1991, at the Lakeside Resort.

Robert S. Vernon

Report of the Entomological Society of Alberta (ESA)

The 38th Annual Meeting of the Entomological Society of Alberta (ESA) was held jointly with the ESC at Banff, October 7-10, 1990. The Proceedings, containing abstracts of papers presented by ESA members at the meeting, are ready for printing except for preparation of the photographic highlights. Arrangements are in hand for the Society's 39th Annual Meeting at the Bayshore Inn, Waterton Lakes, October 3-5, 1991. The program features a symposium entitled "Host Resistance - Mechanisms and Applications?". The location of the 40th Annual Meeting has been tentatively set for Jasper.

Several permanent and temporary committees appointed by the executive were active during the year. A committee on the management of the Society's finances recommended that a portion of the Society's assets be placed in a trust fund, the income from which would be used for the Society's operating expenses. A second committee examined the Insect Collector's Guide produced by the Society, which was last revised in 1964. Input has been solicited from members on the need for the publication and the extent of revision required.

The Awards Committee reported that a nomination is being submitted to ESC for the C. Gordon Hewitt Award. A committee is considering ways of increasing participation in the Society's annual Insect Collection Competition. A committee has also been nominated to look into ways of increasing public awareness of entomology in Alberta. The executive also agreed to endorse ESC's participation in the CFBS initiative on public awareness of science.

The Society's membership stands at 102.

A.S. McClay

Report of the Entomological Society of Saskatchewan (ESS)

The Society has 76 members in 1990-91; a spring and an annual autumn meeting are held each year. The Student and Amateur Encouragement Committee made a number of presentations to schools, and showed prepared displays and insect collections at natural history society meetings and agricultural expositions. There has been a heavy demand for the ESS pamphlet that was prepared last year. The Society continues to publish its newsletter; 2 issues were prepared last year.

Drs. P. Harris and M. Erlandson expressed their concern about registration requirements for biocontrol agents. A summary document outlining these concerns was prepared and submitted to ESC and to Dr. R. Kucey, Agriculture Canada, Ottawa.

The fall meeting will take place in Saskatoon, November 1-2, 1991, at the Agriculture Canada Research Station. A symposium entitled "Biological Control: Theory, Practices and Problems" is planned.

J.F. Doane

Report of the Entomological Society of Manitoba (ESM)

The 46th Annual Meeting of the Entomological Society of Manitoba was held on 1-2 November 1990 in Winnipeg. The symposium "Management of Postharvest Ecosystems: current and future trends" was well received. Drs. Florence Dunkel and John Arnason were the out of town guest speakers.

The Fund Raising Committee is again taking orders for their Entomology T-shirts. A previous sale of 100 T-shirts netted the Society \$630. We have offered to sell the T-shirts at a discount to the other regional societies to help with their fund raising efforts. This along with an advertisement in the ESC *Bulletin* have resulted in the sale of over 100 T-shirts as of September.

The Public Awareness and Youth Encouragement Committee has made 10 presentations to children at day care centers, schools and summer activity camps.

The ESM Newsletter is alive and well, with 4 issues published this year. The Proceedings of the Entomological Society of Manitoba for 1990 had one article, Stored Product Entomology in Canada by Sam Loschiavo, abstracts for the annual meeting and details on society business, for a total of 62 pages.

Paul Fields

Report of the Entomological Society of Ontario (ESO)

The 127th Annual General Meeting was held in Sault Ste. Marie, Ontario, from 19-21 October, 1990. The theme of the meeting was "Insects in the Boreal Zone." The venue, The Great Lakes Forestry Centre, was most appropriate and the facilities and organization exemplary. The theme papers are to be published in the *Proceedings*, Volume 122. The President's Prize-winning student papers will also be highlighted in that volume.

The 128th Annual General Meeting is being held in conjunction with the national and Quebec meetings. The 129th meetings are slated for Kingston, Ontario and the ESO will host the national meetings in Sault Ste. Marie in the fall of 1993.

The ESO archives continue to be sorted and curated, giving them the much needed protection they have so long needed. Much of the early material concerns the ESC. The ESO Librarian, D. Hull, intends to provide a report of the archival material and this will be available to the ESC once the process of cataloguing etc., is complete.

The financial status of the ESO continues to improve and investments, depleted in the past, have been reinstated. The Society is holding down the costs of publication of the *Proceedings*. Subscriptions have slightly increased over the past year (from 211 to 214) despite widespread library budget cuts. The membership list was culled in the last year to remove "members" chronically in arrears; therefore, membership has decreased (from 272 to 248).

The *Proceedings* has offered to publish monographs which would have been submitted to *Quaestiones entomologicae*.

As part of the duties of the ESC representative of ESO, and being a member of the Education Committee of ESC, P. Kevan has instituted an electronic notice-board, called ENTOMO-L, which is open to anyone who wishes to subscribe (at no cost) (details attached). At present, ENTOMO-L has about 40 subscribers world-wide from Taiwan to Finland.

The ESO has been concerned about the apparent demise of the President's Prizes at the present meetings. The ESO would like direction as to the organization which will be responsible for the President's Prizes (in the singular or plural) in 1993 in Sault Ste. Marie. The ESO is willing to assume responsibility if so instructed.

The Officers of the ESO as of September 1991 are as follows*:

President	Mark Sears
President-elect	Steve Marshall
President-elect (1991 - 92)	Don Wallace
Past President	John Cunningham
Past President (1991 - 92)	Mark Sears
Secretary	Sandy Smith
Treasurer	Scott MacDonald
Editor	Peter Kevan
Librarian	Dave Hull
Directors: 1989 - 91	Richard Freitag Blair Helson
1990 - 92	Chris Darling Richard Vockeroth
1991 - 93	Yves Prevost Doreen Watler
1992 - 94	Caroline Bolter Peter de Groot
ESC Representative:	Peter Kevan

* Please note that some officers will change after our own AGM.

Peter G. Kevan

Report of the Entomological Society of Québec (SEQ) Rapport du représentant de la Société d'Entomologie du Québec

La réunion annuelle 1990 de la Société d'Entomologie du Québec s'est tenue à St-Hyacinthe, Québec, les 18 et 19 octobre sous la présidence du Dr. Claude Ritchot. Le thème retenu était "La recherche en entomologie agricole, ca sert à quoi?" Cette réunion a obtenu un vif succès, plus de 130 chercheurs et étudiants y ayant participé.

La réunion annuelle 1991 de la Société d'Entomologie du Québec se tiendra du 21 au 22 octobre conjointement avec la Société d'Entomologie du Canada et la Société d'Entomologie d'Ontario à l'Hôtel Ramada Renaissance de Montréal. L'Université du Québec à Montréal est l'hôte de cette réunion et ses

responsables sont Charles Vincent, Daniel Coderre et Yves Mauffette. Plus de 250 participants sont attendus, qui pourront assister à quatre synposia et plus de 130 communications et posters scientifiques. La SEQ y célébrera son 40^{ième} anniversaire de fondation et marquera l'évènement par la présentation de parchemin à ses membres fondateurs.

La réunion annuelle 1992 se tiendra à l'Université du Québec à Chicoutimi et aura pour thème "l'entomologie et l'informatique" (Entomology and Computers).

La vulgarisation scientifiques de l'entomologie prend vraiment un essor incroyable au Québec. L'Insectarium de Montréal, sous la responsabilité de la ville de Montréal, ouvert au public en février 1990, a dépassé le cap des 500 000 visiteurs. Ce musée à l'architecture inspirée d'un hyménoptère à offert aux visiteurs plusieurs expositions telles celle des Ornithoptères et celle de la miellée d'automne. La Maison des Insectes, ouverte au public à chaque été à Québec, obtient également un succès important depuis son ouverture en 1985 et passe également le cap des 400 000 visiteurs.

L'entomofaune du Québec, nouvel organisme fondé par le Dr. André Francoeur de Chicoutimi, est également très actif et publie régulièrement un bulletin d'information pour ses membres ainsi que plusieurs documents techniques.

Nous avons appris avec regret le décès de trois de nos membres: Le Dr. D.K. McE. Kevan qui fut président et membre honoraire de la SEQ, le Dr. J.A. Doyle, président de la SEQ en 1961-62 et membre honoraire depuis 1982 et M. Paul Morisset membre fondateur de la SEQ, président en 1969-70 et membre honoraire depuis 1979.

Daniel Coderre

Report of the Acadian Entomological Society (AES)

The 51st annual meeting of the Acadian Entomological Society was held on the campus of the University of New Brunswick in Fredericton on July 30-31, 1991. The meeting was scheduled in July so that AES members and guests could attend activities of the Canadian Pest Management Society meeting July 29-31 at the same location. Some AES members actively participated in presented paper sessions of the CPMS as well as those of the AES. The AES banquet was held jointly with the CPMS at the Mactaquac Lodge. Additional programs offered by the Agricultural Institute of Canada on the same dates were also of interest to AES members.

Thirty seven AES members from New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island and Maine attended the 1991 joint meeting. Work is ongoing to retain and increase membership.

At the annual business meeting Dr. Jeff Stewart from Prince Edward Island was unanimously approved as the next President of the Acadian Entomological Society. Brian Craig is Vice President and Dr. Larry Hale is Secretary/Treasurer. The 1992 meeting of the AES will be in Charlottetown, P.E.I. July 28-29.

Eben A. Osgood

MINUTES

Governing Board Meeting Ramada Renaissance du Parc Montréal, Québec October 19, 1991

The meeting was called to order at 0900 hours on October 19, 1991 by President J.E. Laing. Those present were J.E. Laing, President; R. Ring, First-Vice President; P.W. Riegert, Second Vice-President; J.N. McNeil, Past President; B. Roitberg, L.A. Gilkeson, D. Quiring, K.W. Richards and G. Boivin, Directors-at-Large; B. Vernon (ESBC), A. McClay (ESA), J. Doane (ESS), P. Fields (ESM), P.G. Kevan (ESO) and D. Coderre (SEQ), Directors from Affiliate Societies; R.G. Footitt, Treasurer; A.B. Ewen, Scientific Editor-*The Canadian Entomologist*; V. Behan-Pelletier, Scientific Editor-*Memoirs*; F.F. Hunter, *Bulletin* Editor; R.J. West, Secretary; G.H. Gerber and S.A. Marshall, observers.

1. *Notice of Meeting*

Notice of this meeting was mailed on August 19, 1991. Notices were published in the March and June, 1991 issues of the *Bulletin* (Vol. 23).

2. *Absences and Proxies*

J.E. Hollebhone and E.A. Osgood were absent. There were no proxies.

3. *Additions to and approval of the Agenda*

Item 9.2.10.2 - should read Saskatoon, not Regina. The agenda was accepted following a motion by J. McNeil and seconded by P. Riegert.

4. *Minutes - Governing Board Meeting, October 6 1990*

J.N. McNeil moved and A. Ewen seconded that the minutes as circulated by the Secretary on October 29, 1990 and signed by the President and First Vice-President be accepted.

Carried

No action required

5. *Minutes - Annual General Meeting, October 9 1990*

The minutes will be presented for approval at the annual meeting.

6. *Minutes - Governing Board Meeting, October 10 1990*

B. Roitberg moved and J. McNeil seconded that the minutes as circulated by the Secretary on October 29, 1990 and signed by the President and First Vice-President be accepted.

Carried

No action required

7. *Minutes - Executive Council Meeting, April 16, 1991*

The minutes were circulated by the Secretary on May 4, 1991.

8. *Business arising from the previous minutes*

8.1 *Composition of Governing Board/Travel Costs* (Item 9.1.3, Executive Council Meeting, April 16 1991). In a letter to the Board from A. Ewen a review of the composition of the Governing Board and travel costs to the Annual Meeting were requested. J. Laing noted that there were few requests for extraordinary expenses this year. The consensus of the Board was to continue with the form of financing accepted in 1991 at least for several years to see how it works.

No action required

8.2 *Changes to Rules and Guidelines for Fellowship Committee* (Item 9.2.8, Executive Council Meeting, April 16/91). Moved to Item 9.2.12.2.

8.3 *Addition of First Vice-President to Achievement Awards Committee* (Item 9.2.9, Executive Council Meeting, April 16/91). Moved to Item 9.2.9.2.

8.4 *Incorporation of Student Travel Grants in Scholarship Fund* (Item 7.2, Governing Board Meeting, Oct 10/90; Item 9.2.12, Executive Council Meeting, April 16/91). Moved to Item 9.2.12.1.

8.5 *Nominations for CFBS Representatives and Officers* (Item 9.3.1, Executive Council Meeting, April 16/91). Moved to Item 9.2.27.5 [not 9.3.1 as in agenda circulated]

8.6 *Congress of Dipterologists (1994) - Request for \$500* (Item 9.3.4, Executive Council Meeting, April 16/91).

J.N. McNeil moved and L. Gilkeson seconded that \$1000 be provided by the Society in support of organizational costs of the 1994 International Congress of Dipterology with the understanding that this amount be returned to the Society if the meeting subsequently realizes a profit.

Carried

Action: Treasurer

9. *New Business*

9.1 *Correspondence*

R. West introduced items of correspondence which required no formal action. Notice was given of the deaths of Keith Kevan, Alison Pickett, Mark McGregor, Michael Ivanochko, Robert Glen, Howard Tripp, Lawrence Reid, André Doyle, Lawrence Nairn and Richard Prentice. G. Boivin added the name of Paul Morisset, a founding member of the SEQ.

9.2 Reports from Officers, Trustees, Representatives and Committees

R. Riegert moved and R. Ring seconded that all reports be received.

Carried

No action required

9.2.1 Executive Council

The Executive Council's report will be presented at the Annual Meeting. Updates of the President's Office are regularly published in the *Bulletin*.

Action: J.E. Laing

9.2.2 Treasurer

The Society finished the year 1990 in good financial condition despite substantial contributions to the CFBS, the GST and reduced income from reduced interest rates. The Scholarship Fund is growing but more interest income is required before the amounts and/or number of awards can be increased. The impending funding of the book on the *Diseases and Insect Pests of Vegetable Crops in Canada* (ESC/CPS book) will be a concern if the Society has to fund this project from our investment account.

No action required

9.2.2.1 Auditor's Report

The Auditor's Report for 1990 as published in the June 1991 *Bulletin* will be presented to the Annual General Meeting for approval. Improvements have been made to computerize records of accounts and membership.

9.2.2.2 ESC Headquarter's Committee

R. Foottit summarized the activity of the Committee during the past year. Repairs to the house at 383 Winston Avenue included roof repairs, getting a contract signed for snow removal, and fixing the sump pump. Office equipment was modernized by the purchase of new software for the Apple computer. A reliable tenant has been leasing the second floor as office space. This income is now offsetting costs of operating the building (ie., taxes, upkeep, utilities).

9.2.2.3 ESC Clerk's Job Description

R. Foottit announced that the job description for the ESC Clerk, Ms. Sandy Devine, has been written. She is being paid at the rate given to a CR-3 level secretary with the Public Service of Canada. However, she has been rated as a CR-4 by qualified raters and R. Foottit recommends that she be compensated at this level. J.N. McNeil moved and V. Behan-Pelletier seconded that the ESC clerk, Sandy Devine, be paid at the level of a CR-4.

Carried

Action: R. Foottit

9.2.3 *Finance Committee*

The Committee was satisfied with the operations of the house and that the operations appear to be financially self-sustaining. The Committee recommended that the Board take immediate steps with the Canadian Phytopathological Society to clarify the responsibilities of the two societies in the Book venture. The Committee further recommends that no expenditures be authorized until these steps have been completed. The Committee recommended that annual fees for members that do subscribe to the *Memoirs* be increased to \$120. This item will be reviewed in detail by the Committee in December and will be discussed at the Executive Council Meeting. The Committee recommended that the Board investigate ways to reduce expenditures of the *Bulletin*, particularly mailing costs. The Board asked the Finance Committee to do this. Costs of the Society's meetings including the 1991 Meeting will be reviewed by the Finance Committee with recommendations, if any, submitted for consideration to the Board. The Committee recommended that the Board conduct and publish a comprehensive assessment of the costs and benefits of affiliation with the CFBS during 1992. This information will help members in reviewing their membership options.

Action: Executive Council

9.2.4 *Scientific Editors*

9.2.4.1 *Editor - The Canadian Entomologist*

A. Ewen presented an account of office expenses and the number of manuscripts received, accepted, rejected and withdrawn. He announced that Dr. Sara Rosental and Dr. Dan Hare would replace, respectively, Dr. Judith Myers and Dr. Fred Gould as associate editors responsible for manuscripts dealing with insect-plant relationships and insect genetics. No complaints have been received regarding the quality of translations of the abstracts.

No action required

9.2.4.2 *Editor - Memoirs*

V. Behan-Pelletier summarized activities of her office since she took office on January 1, 1991. Seven *Memoirs* will appear in 1991.

No action required

9.2.5 *Editor - Bulletin*

F. Hunter summarized costs incurred by her office as of January 1, 1991. These include the purchase of a desktop publishing package and typing expenses. She stressed that typing costs would be reduced substantially if ESC members would supply an electronic copy along with a hard copy of their submitted text. F. Hunter will look for a new distributor of the *Bulletin* because of late deliveries.

No action required

9.2.6 *Nominating Committee*

Second Vice-President:

George Gerber and Cedric Gillott were nominated by the Committee and their names were published in the March *Bulletin*. Peter Harris was nominated by members of the Society and the names of all three individuals were placed on the official ballot.

Directors at Large:

The Committee nominated Murray Isman, Steve Marshall and Jean Turgeon and the names of all three were published in the March *Bulletin*. No further candidates were nominated by members of the Society and only the names of these three were placed on the official ballot.

9.2.7 *Elections Committee*

The successful candidates were:

Second Vice-President:	Dr. George Gerber
Directors-at-Large:	Dr. Jean Turgeon
	Dr. Steve Marshall

J.N. McNeil moved and L. Gilkeson seconded that the 1991 ballots be destroyed.

Carried

Action: A.B. Ewen

9.2.8 *Fellowship Committee*

There was no call for nominations for Fellows because of quota restrictions. Quota restrictions have prevented the nominations for Fellows for several years. J.N. McNeil moved and B. Roitberg seconded that the Committee nominate a maximum of one Fellow per year when the number of Fellows exceeds 10% of the Membership.

Carried

**Action: Fellowship Committee &
Standing Rules Committee**

9.2.9 *Achievement Awards Committee*

Recipients of the 1991 Awards were named in the September *Bulletin*. Dr. Roger G.H. Downer was acknowledged as the recipient of the Gold Medal Award. Dr. Murray B. Isman was acknowledged as the recipient of the C. Gordon Hewitt Award. The Governing Board extended congratulations to both Dr. Downer and Dr. Isman.

No action required

9.2.9.1 *Improvements to Process of Award Selection*

G. Gerber suggested that the meaning of the term 'calendar year' be defined more clearly in the Committee Guidelines. D. Quiring moved and J.N. McNeil seconded that the Committee Guidelines be changed to read that the recipient of the C. Gordon Hewitt Award be under 40 years of age by December 31 in the year in which the Award is made.

Carried

Action: Rules Committee

J. Laing suggested ways of improving the process of selecting winners of the C. Gordon Hewitt Award. The Board recommended that biographical information for the Hewitt and Gold Medal Awards, including date of birth of the person nominated to receive the C. Gordon Hewitt Award, be included with the ballot sent to the Governing Board for approval.

Action: Awards Committee

9.2.9.2 *Addition of First Vice-President to Awards Committee*

R. Ring suggested that the presence of the First Vice-President on the Awards Committee would benefit continuity from year to year and broaden the base from which qualified candidates are considered. P. Kevan moved and J.N. McNeil seconded that the First Vice-President be a member of the Awards Committee.

Carried

Action: Rules Committee

9.2.10 *Annual Meeting Committee*

9.2.10.1 *Annual Meeting 1991 - Montreal*

D. Coderre estimated an attendance of 250 persons. The Meeting was well supported from the private sector and the Montreal Insectarium confirmed its commitment to provide a 'free' theatre for the Heritage Lecture as well as cocktail costs of \$3 000. About 150 contributions to symposia, oral presentations and posters were received.

9.2.10.2 *Annual Meeting 1992 - Saskatoon*

J. Doane reported on progress for the 1992 Meeting to be held September 27-30 in Saskatoon, Saskatchewan. The Plenary symposium will be on sustainable agriculture. Dr. P.G. Mason, Agriculture Canada Research Station, 107 Science Crescent, Saskatoon, Saskatchewan S7N 0X2 is the contact for those wishing to organize a workshop.

9.2.10.3 *Annual Meeting 1993 - Sault Ste. Marie*

P. Kevan reported on the progress for the 1993 Meeting to be held at the Watertower Inn, Sault Ste. Marie, September 26-30. The following will be the organizers for this meeting: Jean Turgeon (Chair), Vince Nealis (Programme), J. Cunningham (Registration), E. Caldwell

(Financial Solicitations), and D. Wallace (Social). There may be a trip arranged to the Agawa Canyon.

P. Kevan moved and P. Riegert seconded that the ESC encourage the Entomological Society of Ontario to follow up on their idea to invite the Entomological Society of Michigan to join the Entomological Societies of Canada and Ontario for the 1993 Annual Meeting.

Carried

9.2.10.4 *Annual Meeting 1994*

P. Riegert moved and K. Richards seconded that the Board accept the Entomological Society of Manitoba's invitation to hold a joint annual meeting in Winnipeg, Manitoba in 1994. D. Dixon will be program chair for the 1994 meeting.

Carried

9.2.11 *Bilingualism Committee*

Previous concerns regarding the quality of translations of *Can. Ent.* abstracts have been addressed. Abstracts are now translated to an excellent standard. The Department of the Secretary of State will not fund the translation of abstracts for scientific journals but under a new program to promote bilingualism would pay half the costs of translating the Standing Rules and Committee Guidelines into French (a total cost of \$5 000).

J. Doane moved and G. Boivin seconded that \$2500 be made available to translate the ESC Standing Rules and Committee Guidelines under a cost-shared program with the Department of the Secretary of State.

Action: Bilingualism Committee, Treasurer

9.2.12 *Bylaws, Rules and Regulations Committee*

Committee Guidelines were amended to ensure that notices in the *Bulletin* specify that travel grants are not intended to fund attendance at Scientific Meetings or visits to the major research sites of the student's thesis project. Standing Rule IV 2(a) was changed to limit claims of Board Members and Trustees to transportation expenses.

9.2.12.1 *Incorporation of Student Travel Grants Award into Scholarship Fund*

No changes to the Bylaws, Standing Rules or Committee Guidelines would appear to be necessary to incorporate the Student Travel Grants Award into the Scholarship Fund because none of these documents refer to the establishment of the Fund or how the Fund was to be managed. The Board instructed the Treasurer to merge the Student Travel Grants and the Scholarships into one Fund.

Action: Treasurer

9.2.13 *Endangered Species Committee*

Robert Cannings wrote to a number of organizations and agencies outlining the function of the Committee and requesting support for the inclusion of terrestrial invertebrates in their policies and activities. Positive feedback was received from the Committee on the Status of Endangered Wildlife in Canada, the B.C. Ministry of Environment and the Canadian Nature Federation. Planned deliberations with COSEWIC were outlined as were future initiatives to develop lists of protected areas, review and recommend changes to existing legislation, and identify potential research problems and research sites in cooperation with the Biological Survey of Canada.

Action: Endangered Committee

9.2.14 *Heritage Committee*

Some material will be accepted by the Public Archives of Canada early in 1992. Books on the Entomologists of Saskatchewan and British Columbia were published and distributed to members in 1991.

No action required

9.2.15 *Insect Common Names Committee*

A report from E. Belton and D. Eidt was received and summarized progress on the Common Names List. A memo to the Board from D. Eidt suggested that a Lexicon rather than a Common Names List would be more appropriate. The Board recommended that a lexicon not be produced because this task would be too onerous. The President will take this recommendation to the Co-Chairs and ask them to specify the proposed content and completion date of the Common Names List. This item will be discussed further at the next meeting of the Board.

Action: President, Secretary

The updated list of laboratory cultures has been completed and is available by request to Dr. Jim Kelleher (see p. 99, June 1991 *Bulletin*).

No action required

9.2.16 *Membership Committee*

A direct mail campaign resulted in some new Student Memberships and payment of dues by tardy Members. Fax numbers and electronic addresses are being added to the membership list. Production of the new list will be overseen by B. Footitt. Software is in place for this and a master list should be available soon. Honorary Membership nominations were not solicited in 1991 due to quota restrictions.

9.2.17 *Public Education Committee*

The Committee disbursed a total of \$800 in funds for public education programs in 1991 to the ESBC (\$200), SEQ (\$200), and ESM (\$400).

The revised brochures on "Entomology in Canada: Career Opportunities" and "Entomology in Canada: The Entomological Society of Canada" were combined into one publication. Ms. F. Harper has agreed to translate the revisions for \$350. J.N. McNeil moved and G. Boivin seconded that the Society make available up to \$2000 to the Committee to produce copies of the new brochure in both English and French.

Carried

**Action: Treasurer &
Public Education Committee**

Dr. Brock Fenton, CFBS/Canadian Society of Zoologists, requested that the Society support a proposal for Science Culture Canada to develop educational packages on science for public schools by committing \$1000 in seed money. This request was approved by a mail ballot to the Board in September.

No action required

9.2.17.1 *Matching Fund Request from ESBC*

The ESBC had requested \$500 from the ESC to match its contribution to Public Education in 1991, but the Public Education Committee does not have the authority to increase the annual funding level without approval of the Board and only gave \$200. The ESBC requested an additional \$300 from the Board.

J.N. McNeil moved and L. Gilkeson seconded that an additional \$300 be made available to the ESBC for public education from the residual funds for 1991.

Carried

**Action: Treasurer &
Public Education Committee**

9.2.18 *Publications Committee*

The results of the Committee's major deliberations were summarized in its report for the Executive Council Meeting in April, circulated to the Governing Board last May. The Committee reviewed the suggestion that authors remain anonymous to reviewers of the submissions and recommended that such a policy not be implemented. Twenty-seven books were received for review and 4 book notices were prepared. Several reviews were published in the *Bulletin*. Only 1 application for page-charge waiver was received.

No action required

9.2.19 *Scholarships Committee*

The 1991 Scholarship Award Winners are Mr. Eric Lucas (University of Québec à Montréal) and Ms. Heather Anne Higo (Simon Fraser University).

The Committee requested that the Governing Board consider raising the value of the Awards which has been set at \$2 000 for several years and instituting a new Award for Doctoral candidates. J.N. McNeil pointed out that the intent of the Scholarships was to encourage entrants into entomology (i.e., Master's Students) and that the Travel Awards have to date always been given to PhD students. The Board did not endorse any changes to the number and value of the Awards at this time.

The Committee also suggested that Regional Societies be encouraged to nominate members to the Committee that have a working knowledge of French in recognition of the significant numbers of French applications for the Awards.

Action: Directors of Affiliated Societies

The Committee also requested clarification on the lengths of the terms to be served by the Chair and Committee members. Terms are defined by the President and the Affiliated Societies.

9.2.20 *Research-Travel Grants Committee*

Travel grants for 1991 were awarded to Bernard Landry and Brad Sinclair both of Carleton University. The Committee Chair will write to Department Heads of schools where graduate students in entomology are enrolled to promote applications from students in all sub-disciplines in entomology.

Action: Research-Travel Grants Committee

9.2.21 *Science Policy Committee*

Little has changed since the Committee report in the March 1991 *Bulletin*. A copy of the thesis on Economic Returns of Entomological Research is available. A synopsis will appear in a future issue of the *Bulletin*. The Committee is willing to consider new projects. P. Kevan suggested that the conservation of insect pollinators be considered as a new initiative by the Committee.

Action: P. Kevan, P. Riegert

9.2.22 *Student Affairs Committee*

Survey results and recommendations were published in the June *Bulletin*. Comments from the membership were solicited but not received. Recommendations to the Board are:

1. Some form of student representation on the Board. This could be a yearly appointment of a student from the area in which the Annual Meeting is held although students from outside areas would be welcome. B. Roitberg moved and A. McClay seconded that the President invite the

Student Affairs Committee to send a student to participate in the Annual Board Meetings and that funding for this be made available from the President's discretionary fund, if necessary.

Carried

Action: President

2. Electronic mail directory for the ESC (this has been done). Details on the electronic noticeboard will be published in the December *Bulletin* and have been circulated to Secretaries of Regional Societies.

3. More scholarships/awards for students. See above - Scholarships Committee. Additional recognition of excellence could be given as plaques or some other non-monetary token. The Scholarships Committee and Student Affairs Committee were directed to work together to generate guidelines for new (non-monetary) awards to recognize excellence by students in entomology.

**Action: Scholarships Committee &
Student Affairs Committee**

4. A reduced student membership fee. B. Footitt will look into the possibility of reducing fees to students who do not wish to receive the journal.

Action: B. Footitt

5. Forum (*Bulletin*) where interested Students could find out about committee openings or volunteer work with the Society. The President and Committee Chairs will ask students to involve themselves in Committee work by periodic notices/articles in the June and September issues of the *Bulletin*.

Action: President

6. The Student Affairs Committee should be officially empowered to run a job skills symposium every few years. The Committee can accomplish this well in advance with local organizing committees. The Membership Committee has the names of students and their supervisors that could be used in making a list for a job skills symposium.

P. Kevan recommended that an 'ideas' book be started and passed on to succeeding Chairs of the Student Affairs Committee.

Action: Chair, Student Affairs Committee

9.2.23 *Pest Management Policy Committee*

A first draft of the Committee's report was produced and circulated. A second draft is in review but lacks a contribution in the area of pesticides and chemical control. A new Chair and a new member will be appointed to the Committee.

Action: R. Ring

9.2.24 *Diseases and Insects of Vegetables Committee*

The report of the Steering Committee Meeting in Banff in June 1991 and a revised schedule for publication of the ESC/CPS book was circulated to the Board. John Garland phoned R. West on October 17 and asked that the following update be given to the Board:

1. Book notices have been sent to the Montreal meeting.
2. Bids from two printers, MOM and RUNGE, are being solicited. A decision is expected by the end of December. The Treasurers of the two Societies (ESC and CPS) will be asked to develop a payment scheme with the printer that is selected. Money will not be requested until the new year.
3. The CPS is committed to a French translation of the book and this will go ahead. It is very likely that the English version will be submitted by Gilles Oulette to the Secretary of State for translation as recommended by the Bilingualism Committee.
4. The English version will be given to the printer in January/February. Work preparatory to printing will proceed but the book will not be run off until the French translation is well underway. Gilles Oulette will be responsible for getting French translations for the captions. These translations will be included in the preparatory work.

L. Gilkeson strongly suggested that a marketing/promotion strategy be done before the contract for printing be signed. P. Kevan suggested that printing and binding could be done more cheaply offshore. J.N. McNeil suggested that the President contact John Garland and the President of the CPS for more information on budgetary information before the Board approves any funds for producing the book. This item will be brought forward to the next Board Meeting.

Action: President

9.2.25 *Insect Transmission of Plant Diseases Committee*

The brief on the issue of insect transmission of plant diseases as a neglected area of entomological research has been completed and copies were circulated to the Governing Board. The Board recommended that the report be sent back to the Committee for editing for subsequent publication in the *Bulletin*.

Action: President

9.2.26 *Directors from Affiliates*

Reports from the Directors of the Affiliate Societies were accepted. Presentations were made by: B. Vernon (ESBC), A. McClay (ESA), J. Doane (ESS), P. Fields (ESM), P. Kevan (ESO), G. Boivin (SEQ) and D. Quiring (AES).

No action required

A. McClay noted that some concern was expressed over letters being written to school boards by people who wished to ban the killing of insects. This has led to actions such as insect collections being banned by local school boards. P. Field suggested that the ESC response to such events include mention of the Endangered Species Committee. Response to this concern will be directed first through the animal welfare subcommittee of the CFBS.

Action: J.N. McNeil

The Regional Societies welcomed attendance by the President or the President's designate at their annual meetings. J.E. Laing asked the Regional Directors to send invitations to attend their annual meetings to the President as soon as they know the date of the meeting so that plans can be made to have an ESC representative attend regional meetings.

Action: Directors from Affiliated Societies

9.2.27 Canadian Federation of Biological Societies

J.N. McNeil strongly recommended that the ESC continue as a member of the CFBS despite a fees increase slated for January 1992 which will be a direct expense to our Society. Activities of the CFBS are regularly published in the *Bulletin*. The most recent activity of the CFBS was to present a brief to the House of Commons protesting the 3% limit to increasing research funding by federal granting agencies.

9.2.27.1 Board of Governors

9.2.27.2 Science Policy Report

President Laing presented a report summarizing the numerous activities of the CFBS Science Policy Committee.

9.2.27.3 Program Committee

R.J. West informed the Board of the themes for the next 3 annual meetings of the CFBS. A new program representative, possibly from the Toronto area, was recommended.

Action: R. Ring

9.2.27.4 Archives Committee

P.W. Riegert presented his report given to the CFBS Archives Committee.

No action required

9.2.27.5 Nominations for CFBS Representatives and Officers

J.E. Laing suggested that J.N. McNeil continue sitting on the Board of Governors, that Ian Smith be our representative on the Science Policy Committee and that either serve on the Program

Committee where necessary. P. Riegert was asked to continue to serve on the Archives Committee. J.E. Laing invited Board Members to recommend names of people to lobby MPs for improvements to science policy.

Each year the CFBS asks for names and biographies of persons willing to stand for election as Directors at Large and President of the CFBS.

Action: Nominating Committee

9.3 Other Business

There was no other business.

10. *Next Meeting*

The next meeting of the Governing Board will be held at the Ramada Renaissance du Parc at 1200 hours on October 23, 1991.

11. *Adjournment*

President J.E. Laing adjourned the meeting at 1710 hours, October 19, 1991 following a motion by P. Riegert seconded by J.N. McNeil.

MINUTES

41st Annual General Meeting Ramada Renaissance du Parc Montréal, Québec October 22, 1991

President J.E. Laing called the Meeting to order at 1700 hours. 58 members were present.

I. *Dr. Keith Kevan Scholarship*

Peter Kevan escorted Mrs. Kevan to the podium where she presented President Laing with a cheque for \$10 000 from the Kevan family to be used in the Society's Scholarship Fund. President Laing thanked Mrs. Kevan for her family's generous donation and passed the cheque on to the Treasurer.

1. *Notice of Meeting*

Notices of the meeting were published in the March and June 1991 issues of the *Bulletin* (Vol. 23).

2. *Proxies*

No proxies were registered.

3. *Additions to the Agenda and Approval of the Agenda*

There were no amendments to the agenda. G. Gerber moved and A. McClay seconded that the agenda be accepted.

Carried

4. *Deceased Members of the Entomological Community*

A moment of silence was observed in memory of Keith Kevan, Paul Morisset, Alison Pickett, Mark McGregor, James Kring, Michael Ivanochko, Bob Glen, Howard Tripp, Larry Reid, André Doyle, Laurie Nairn, Dick Prentice, Kurt Depner, Gary A. Simmons, Jack Barlow, Jack Armstrong, Herb Boyce, Lionel McDowall, John Serger, George Lewis, George Bradley, Bob Straby and Adrian Gilbert.

5. *Minutes of the 40th Annual General Meeting*

J. Shemanchuk moved and S. Hill seconded that the minutes of the 40th Annual General Meeting as printed in the December 1990 issue of the *Bulletin* (Vol. 22) be accepted.

Carried

6. *Business Arising from the Minutes*

There was no business arising from the previous Minutes.

7. *Report from Governing Board*

President Laing presented a report on behalf of the Governing Board and summarized the participation of the ESC in activities of the CFBS. The report from the Governing Board and regular updates of the involvement of the ESC with the CFBS will be published in the *Bulletin*. G. Ball moved and S. Hill seconded that the President's Report be accepted.

Carried

7.1 *Changes to Standing Rules*

D. Quiring moved and L. Gilkeson seconded that the following sentence be added to the end of Standing Rule I. 2(a): "In the latter instance, only 1 fellow may be nominated and ratified each year."

Carried

Action: Secretary, D. Quiring

D. Quiring moved and S. Hill seconded that the following change to Standing Rule IV (a) be approved: Change sentence #1 to: "The Committee shall consist of 4 Members of the Society, one of which will be the first Vice-President of the Society."

Carried

Action: Secretary, D. Quiring

8. *Auditor's Report*

R.G. Foottit presented the Auditor's Report for 1990 as published in the June 1991 issue of the *Bulletin*.

B. Foottit moved and L. Gilkeson seconded that the Auditor's report be accepted.

Carried

No action required

9. *Elections Committee Report*

R. West read the Elections Committee report. Those elected were:

Second Vice-President:

Dr. G.H. Gerber

Directors-at-Large:

Dr. S.A. Marshall

Dr. J. Turgeon

10. *Installation of Officers*

The President called on J.N. McNeil, retiring Past-President to escort G.H. Gerber, Second Vice-President to the dias. President J.E. Laing turned the gavel over to R. Ring 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.

11. *Presentation of Service Award*

President Ring thanked J.E. Laing, outgoing President for his service to the Society and presented him with a service award.

12. *Appointment of Auditor*

R.G. Foottit moved and J.N. McNeil seconded that McCay, Duff, and Company be retained as auditors for 1991.

Carried

Action: Treasurer

13. *Resolutions*

13.1 *Thanks to Organizing Committee*

At the request of President R. Ring, John Cunningham presented the following resolutions on behalf of the Entomological Society of Canada:

“*Whereas* the 1991 Joint Annual Meeting of the Entomological Society of Canada, Société d’Entomologie du Québec and the Entomological Society of Ontario have met at the Ramada Renaissance du Parc in Montréal, Québec, October 20-23, 1991; 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 the social reception by the City of Montréal at the Montréal Insectarium and the inspiring address by George Brassard were greatly appreciated by all; and

Whereas there has been ample opportunity provided for social interaction, and visits to Montréal and vicinity;

Be it resolved that the Entomological Society of Canada, Société d’Entomologie du Québec and the Entomological Society of Ontario express their sincere thanks to the Organizing Committee for their hard work and skill in arranging a most worthwhile and entertaining program; and

Be it further resolved that the three Societies thank the Organizing Committee and meeting contributors for their generous assistance; and

Be it further resolved that the three Societies express their thanks to the Management and Staff of the Ramada Renaissance du Parc for their courteous assistance during the Meeting.’’

J. Cunningham moved and L. Gilkeson seconded that the resolutions be accepted.

Carried

Action: Secretary

13.2 *Biological Survey of Canada*

G. Ball presented the follow resolution on behalf of the Biological Survey of Canada:

Resolution Presented on Behalf of the Biological Survey of Canada (Terrestrial Arthropods)

Resolution concerning study of biodiversity of terrestrial arthropods

Whereas maintenance and wise use of biodiversity is acknowledged generally to be essential to the normal functioning of life-sustaining ecosystems; and

Whereas understanding of biodiversity is essential to manage, use wisely and protect life-sustaining ecosystems; and

Whereas terrestrial arthropods comprise millions of species, an overwhelming component of biodiversity; and

Whereas the Entomological Society of Canada is concerned with development and the means

of development of knowledge of terrestrial arthropods; and

Whereas systematic entomologists contribute to the understanding of biodiversity and thus make management, wise use and protection possible through discovery, description and classification of terrestrial arthropods; and

Whereas the Canadian contribution to study of diversity of terrestrial arthropods is being weakened through reduction in number of systematists in institutions of higher learning and in institutions of the federal government with mandates and responsibilities for knowledge of biodiversity and ecosystems; and

Whereas such reductions constitute failure to fulfill responsibilities;

Be it resolved that The Entomological Society of Canada urges government ministries and institutions of higher learning responsible for such failure, to reconsider the negative actions that have led to reduction of support for research in systematic entomology; and

Further be it resolved that The Entomological Society of Canada urges that action be taken to prevent further erosion in said organizations with capabilities in systematic entomology; and

Further be it resolved that The Entomological Society of Canada urges the federal government in conjunction with institutions of higher learning to undertake development of a plan to increase the Canadian contribution to study of terrestrial arthropod biodiversity.

G. Ball moved and C. Vincent seconded that the resolutions be accepted.

Carried

S. Hill recommended that the resolutions be given to the media.

Action: Public Education Committee

13.3 Thanks to Montreal Insectarium

D. Eidt moved and G. Ball seconded that a letter be sent to the Montreal Insectarium thanking George Brassard and the staff of the Insectarium for their excellent work and kind hospitality to the Society.

Carried

Action: President Ring

14. *New Business*

14.1 *Electronic Mail*

P. Kevan provided information and encouraged members to use the electronic mail (E-mail) network for entomologists. Instructions and further information will be published in the *Bulletin*.

14.2 *Old Timers Newsletter*

E. Becker invited anyone retiring to request copies of his newsletter for "old-timer" entomologists and/or their spouses. Five issues were published from August 1990 to August 1991. Copies of the Newsletter will be sent to the *Bulletin* Editor, the Secretary and BRD library.

Action: E. Becker

15. *Notice of 42nd Annual General Meeting*

The 42nd Annual General Meeting will be held in Saskatoon, Saskatchewan, on September 29, 1992. The time and place of the meeting will be announced in the March 1992 *Bulletin* (Vol. 24).

Action: Secretary

16. *Adjournment*

President R. Ring adjourned the 41st Annual General Meeting at 1745 hours following a motion by J.N. McNeil seconded by G. Ball.

MINUTES Governing Board Meeting Ramada Renaissance du Parc October 23, 1991

The meeting was called to order at 1218 hours on October 23, 1991 by President R. Ring. Those present were R. Ring, President; J.E. Laing, Past-President; P.W. Riegert, First Vice-President; G.H. Gerber, Second Vice-President; L.A. Gilkeson, D. Quiring, K.W. Richards, G. Boivin, S.A. Marshall, Directors-at-Large; R. Vernon (ESBC), A. McClay (ESA), P. Fields (ESM), P.G. Kevan (ESO), and D. Coderre (SEQ), Directors from Affiliate Societies; R. West, Secretary; R.G. Footitt, Treasurer; V. Behan-Pelletier, Scientific Editor - *Memoirs*; F.F. Hunter, Editor - *Bulletin*; and K. MacKenzie, Student Affairs Committee.

1. *Notice of Meeting*

Notice of this meeting was mailed on August 19, 1991. Notices were published in the March and June 1991 issues of the *Bulletin* (Vol. 23).

2. *Absences and Proxies*

2.1 *Absences*

A.B. Ewen, J. Turgeon, E.A. Osgood.

2.2 Proxies

There were no proxies.

3. Additions to Agenda and Approval to the Agenda

There were none.

B. Footitt and G. Boivin seconded that the Agenda be accepted.

Carried

No action required

4. Minutes of Previous Governing Board Meeting

G. Gerber moved and J.E. Laing seconded that the Minutes of the Governing Board Meeting held on October 19, 1991 as circulated be accepted.

Carried

No action required

5. Business Arising from Previous Governing Board Meeting

5.1 Insect Common Names

J.E. Laing consulted with D. Eidt. No lexicon of common names will be produced. The common names list will be presented at the next Executive Council Meeting.

Action: Common Names Committee

5.2 ESC/CPS Book

Budget information and a flyer for the ESC/CPS book was circulated. Hugh Danks has been appointed as Chair of an *ad hoc* committee to oversee the marketing and publication of the ESC/CPS book and act as an advisor to the Board. Once budgetary information is available, H. Danks will supply the information needed to make a motion to approve a budget for the production of the ESC/CPS Book. The motion will be made and seconded by members of the Executive Council and sent to the Board as a mail ballot.

Action: Executive Council, Secretary

6. Other Business

6.1 Appointments

6.1.1. Executive Council

L. Gilkeson moved and G. Boivin seconded that the Executive Council for 1991-92 be: R. Ring, President; J.E. Laing, Past-President; P.W. Riegert, First Vice-President; and G.H. Gerber, Second Vice-President.

Carried

No action required

6.1.2. *Trustees*

D. Quiring moved and G. Gerber seconded that the Trustees for 1991-92 be: R.G. Foottit, Treasurer; A.B. Ewen, Scientific Editor (*The Canadian Entomologist*); V. Behan-Pelletier, Scientific Editor (*Memoirs*); C.H. Craig and R.H. Elliot, Assistant Scientific Editors; F.F. Hunter, *Bulletin* Editor; and R.J. West, Secretary.

Carried

No action required

6.1.3. *Committees and Representatives*

D. Quiring moved and K. Richards seconded that the Governing Board approve the list of Committees and Representatives as prepared by the President and further that the Governing Board accept the President's appointees to remaining positions to be filled.

Carried

Action: President

6.2 *Budget*

R. Foottit moved and J. Laing seconded that the budget for 1992 be approved subject to amendments by the Board at the October 19, 1991 meeting and subject to updated budget instructions concerning the production of the ESC/CPS Book to be supplied by the Board.

Carried

Action: Treasurer, Governing Board

7. *New Business*

There was no new business.

8. *Next Meeting*

The next meeting of the Governing Board will be held on September 26, 1992 beginning at 0900 hours in Saskatoon, Saskatchewan. If necessary the meeting will continue on September 27, 1992. Notices on the location of the meeting will be placed in the *Bulletin* and circulated to the Board.

Action: Secretary

9. *Adjournment*

The meeting was adjourned by President R. Ring at 1340 hours following a motion by P. Kevan seconded by G. Gerber.

ARTICLES

TEACHING, RESEARCH AND CANADA

Gold Medal Address to the Entomological Society of Canada

21st October 1991, Montréal

by

ROGER G.H. DOWNER

Department of Biology, University of Waterloo

Benjamin Disraeli once said of his political rival, William Gladstone, ‘He is a man who has much to be modest about.’ For once, I can identify with Mr. Gladstone. My pleasure in accepting the Gold Medal of the Entomological Society of Canada is tempered considerably by the recognition that there are many Canadian entomologists who, although more deserving than me, have not yet received this honour. I am aware also that, throughout my career, I have been surrounded by talented, resourceful students and research associates. Without their support and invaluable contributions, I would not be standing here today. I would be remiss also if I did not acknowledge the excellent support that I have received over the years from NSERC.

In spite of these eminently justified reservations and acknowledgements, I am pleased to accept the Gold Medal and to express sincere thanks to the Society and to all who were involved in my nomination and selection. My decisions to pursue a career in entomology and to emigrate to Canada have provided me with a wealth of wonderful experiences, opportunities and friendships. This award vindicates further those early decisions and reinforces the debt of gratitude that I owe to entomology, entomologists and Canada. I emphasise my indebtedness to these groups because, for the rest of my talk, I wish to consider some concerns that I have for their future welfare.

I first arrived in Canada in 1967 which was, as most of you will recall, the year of Canada’s centenary. As a new immigrant, it was exhilarating to share in the pride and optimism that Canadians displayed for this wonderful land of opportunity. We rejoiced in our abundance of natural resources, great natural beauty, sound economy and stable political system. It is sobering to reflect upon the changes that have occurred during the almost twenty-five years that have elapsed since those euphoric celebrations. We have failed to protect and husband our natural resources prudently, our environment is dangerously threatened, we have accumulated a national debt of more than \$400 billion and, as a nation, we have become more fragmented than united. Furthermore, we have engaged in interminable constitutional debates while nations that were considered third world in 1967 have surpassed us in terms of economic growth and progress. These are depressing observations and clearly major changes are required if we are to reverse or even halt the downward slide.

Much of the blame for the current situation resides with those who, in the interests of political expediency, avoided unpopular decisions and promoted irresponsible policies of fiscal profligacy which were not in the long-term interests of this country. It is tempting to expound at length upon the inadequacies of recent political leadership and on the unrealistic expectations of many Canadians who are currently enjoying a lifestyle and standard of living that is well beyond our national environmental and economic means. However, in the present forum, it is more appropriate to examine our own house and to determine if we, as educators and researchers, are doing all that we can to improve the economic

and social welfare of Canada. It is a question that I believe every professional group should be asking. Those of us who are involved in the education of university students have an enormously important responsibility. It is estimated that 50% of all new jobs created during the next decade will require a university degree. In order for Canada to compete effectively in the global markets of the future, we need men and women who are problem solvers and who are imbued with the entrepreneurial zeal, knowledge and confidence to take advantage of the opportunities that become available. These men and women must also be responsible citizens with the social, ethical and inter-personal skills that are required to ensure an honest, diligent, compassionate society. The quality of the education that students receive in Canada's universities will determine, to a large extent, the effectiveness with which they will represent our national interests in the highly competitive global economy of the future and the values that they bring to our social and political systems. Thus it is important to ask if we are currently providing them with the education that they require and deserve. I am concerned that we are not.

Part of the problem can, of course, be attributed to the appalling neglect of the university system by successive federal and provincial governments. It makes little sense that governments spend \$109 per day to keep a convict in prison but only \$23 per day to keep a student in university, or that the most impoverished states in the U.S. spend more than the richest province in Canada on the education of a university student, or that the student:teacher ratios in the best Canadian universities are 2-3 times greater than in the best universities in the U.S. and Europe. This neglect of higher education is a serious problem and we must make every effort to mobilise public and political support for change. However, the lack of adequate funding does not divorce us from our responsibility to provide the best and most appropriate education that we can manage. In this regard, we must be willing to assess our current procedures and, if necessary, change them. Are our curricula pedagogically appropriate for the overall objectives that we are attempting to achieve or are they legacies of historical serendipity? Do we spend time helping our students to hone their analytical skills, to solve problems, to consider alternative interpretations and to challenge dogma or do we pontificate for two or three hours each week using slightly updated versions of last year's lectures? Do we encourage debate and discussion about the broader ethical issues of modern biology and environmental protection or do we add to the problems of academic compartmentalisation and ignore the broader context? These are important considerations that must be addressed if we are to discharge our responsibilities responsibly and, thereby, exploit optimally our most important natural resource. Guy Denileau, President, Université de Campeigne expressed the issue in entomological terms when he said, "Students are to technology as mosquitoes are to malaria." In other words, students are the vectors who spread new ideas. It is up to us to ensure that they are well infected and have something worthwhile to carry.

In addition to the role that many of us play in education, we have strong responsibilities for and commitment to research. The discovery of new knowledge is a fundamental responsibility of civilised society. Research leads to a better understanding of the world in which we live and, in some cases, results in important new insights that improve the quality of life and/or create new economic opportunities. Involvement of the Canadian research community in a broad range of research activities will enable Canada to maintain a window on international research developments, ensure the availability of a broadly based cadre of researchers to exploit new opportunities and lead to the development of new products and technological advances. It should be evident that optimal benefits will accrue from long-term, broadly based research programmes but unfortunately, whenever research investment is equated with economic growth, there is an expectation of immediate return. It is salutary to reflect that if Gregor Mendel had been working in an industry with short-term goals rather than that in which he was employed, he would probably have been encouraged to develop a better fertiliser instead of crossing peas.

Governments must recognise that research is a long-term investment and failure to make this commitment will impair seriously the economic prospects of our children. Canada's current standing in the international tabulations of investment in research and development is an embarrassing reflection of the lack of understanding that successive governments have demonstrated in this important principle.

The championing of basic research is appropriate in the current research climate with its increasing emphasis on strategic, mission-oriented research. However, there is an important caveat that must be introduced. Not all of the research that is currently being conducted in Canada under the guise of basic research is good. Investigations that repeat or change minimally previous studies are occasionally necessary but often they represent an abrogation of the responsibility of researchers to discover new knowledge and to probe the unknown. Too many research careers are devoted to "me too" research and this abuse of the privilege of doing research is not in the national interest. Furthermore, just as it is wrong to laud all "basic" research, it is equally inappropriate to condemn all research that has an obvious practical application. Much excellent applied research is conducted by Canadian entomologists and contributes markedly to the advancement of national goals in many areas including agriculture, environment, health and international trade. Indeed, I would argue that good researchers should always be alert to opportunities to apply and exploit their research findings.

There is a further responsibility that I wish to identify for all of us who purport to be educators and researchers and that is to spread the gospel of science among all Canadians and particularly young Canadians. It is an unfortunate reflection of the poor job that we do in this regard that a recent poll conducted by a researcher at the University of Calgary indicated that only 4% of those surveyed could name a Canadian scientist. If we expect to garner public support for our pleas for increased funding or to have a continuing supply of young people for our classrooms and research laboratories, then we must accept a role in exciting and informing the public about science. Therefore, I strongly encourage you to leave your laboratories occasionally, go into school classrooms, talk to service clubs, write articles for the popular media and encourage your graduate students and colleagues to do the same. Ideally, the result will be a better informed, scientifically literate electorate that will understand the long-term scientific implications of underfunding and other political issues.

This presentation has identified a concern about the future of Canada and, I hope, has presented a challenge to all of us to do something about it. There is a story about four men, an Englishman, an Irishman, a Scotsman and a Canadian who were killed in a car accident. Upon arrival at the Pearly Gates, they learned that there was a considerable backlog and rather than increase the congestion, St. Peter offered them the option of paying \$50 and returning for another chance on earth. The Englishman did the proper thing, paid \$50 and asked for a receipt. The Irishman paid \$60 and received a bottle of "Old Bushmills" as well as his life. The Scot talked St. Peter down to \$39 and the Canadian is still up there waiting for the government to pay.

I do not deny that we need additional government funding for our universities and our research programmes in government and universities; indeed, I believe that we should campaign aggressively for the additional resources that we need so badly. However, we cannot afford to sit back and wait for the government to pay. We must show initiative, take every measure that we can to improve the quality of the job that we are doing and, thereby, contribute positively to the recovery and growth of this great country that I am proud to call my home.

ENTOMOLOGICAL RESEARCH AND POLITICS

Paper presented to the Entomological Society of Canada
21st October 1991, Montréal
by

E.J. LEROUX
Formerly Assistant Deputy Minister, Research Branch
Agriculture Canada

and **J.J. CARTIER**
Formerly Director General, Research Branch
Agriculture Canada

INTRODUCTION

Entomological research has been linked to politics - eg., Government Acts, policies and programs - from its modest beginnings, more than 100 years ago, to the present. To our knowledge, it predates all other federally supported Biological sciences activity that later developed. The driving force to its creation and development was the wisdom of the vested authorities of the time who understood clearly the urgent needs to control the many insect pests that ravaged our farms across Canada. And for over a century, entomological research has had a successful record in serving the nation's primary resource industries. But its growth, evolution and development have over time had many downturns in federal support with attendant negative impact on the research carried out, the technology being transferred and the researchers involved. At the core of the politics-research interaction is of course Government science funding, the extent and amount of it, entomological and otherwise. To this end, this paper examines: (I) Government R&D (Research and Development) funding, past and present; (II) The society's response to downsizing; (III) New entomological frontiers; (IV) Industrial and private sector R&D in Canada; and (V) Conclusions.

I - GOVERNMENT R&D FUNDING: PAST AND PRESENT

A - A brief look at Government Funding in the Past

Entomological research in Canada was formally launched by the Federal Government when Dr. James Fletcher was appointed honorary entomologist to the Federal Department of Agriculture on June 1, 1883. This was in response to the needs and development of pioneering Canadian Agriculture. Previously, in April 1862, with the formation of the Entomological Society of Canada (formally coming into being on September 26, 1863) the Government of Ontario asked the Society to contribute crop protection methods urgently needed in Ontario and supported the Society with an annual grant (terminated only in 1972). From 1884 until his death in 1908, Dr. Fletcher prepared annual reports on "Injurious Crop Insects" and described ways in which these insects might be controlled by farmers.

With the launching of the Experimental Farm Station Act in 1886, Dr. William Saunders, an entomologist, was appointed the first Director of the Experimental Farm network. He organized five agricultural research divisions that would be recognized on the basis of scientific disciplines, namely:

a) Entomology and Botany; b) Field Crops and Animal Husbandry; c) Cereals; d) Chemistry; e) Horticulture. Over the years, a succession of entomologist leaders such as Fletcher, Hewitt, Gibson, Swaine, Crawford, Prebble, Arnason, Holland, Glen, Smallman, LeRoux, Cartier etc. were able to sustain despite occasional funding downturns a viable cadre of entomologists. However, the many reorganizations from the 1900s to the 1960s resulted in much competition for Research funds and human resources between science performers in the Department. In due course, along with Agriculture Canada, other Departments such as Forestry, Fisheries, Wildlife, Museums, Environment, Energy Mines and Resources, National Health and Welfare, Science and Technology, Transport, the National Research Council, the National Science and Engineering Research Council, the Medical Research Council, the Social Science and Humanities Research Council and Atomic Energy of Canada, all competed for the Government R&D resources.

Hence, for entomological research which from 1883 to 1914 had the government funding support field much to itself, noticeable budget reductions were experienced from the early 20s to the early 40s. Research funding once more increased from the mid 40s to the mid 60s but again declined from the late 60s to the late 80s. Cuts were generally related to changes in governments and R&D reviews used by politicians to justify their action. Many of you will recall the more pertinent of these:

1. The Massey Commission of 1951
2. The Glassco Commission of 1962
3. The Federal Task Force on Agriculture of 1969
4. The Science Council Report of 1969 on the Role of the Federal Government in support of Research in Canadian Universities
5. The Senate Committee Report on Science Policy of 1972-73 (the so-called Lamontagne Report)
6. The Neilsen Report on R&D spending in the Federal Government, 1984-85, which contained the D'Ailly report on Agricultural Research

Other reports giving advice to the Government on R&D spending which increased in numbers and complexities, especially in the 1970s and 1980s, continued to flow from all quarters each spelling out what the many national requirements of the Government's Industry, Technology and Education budgets should contain. The impact on Government science performers was that their R&D budgets were eroded in a senseless and endless confusion of scannings by policy and financial bureaucracies: the Ministry of State for Science and Technology (MOSST), the Treasury Board and its analysts, Ministerial Committees and more recently the Prime Minister's own National Advisory Board on Science and Technology (NABST).

B - The Present

With respect to present Government R&D spending, the Lortie NABST Report of May, 1991 to the Prime Minister wants to, once again, "revitalize science and technology in the Government of Canada" and recommends fundamental and pervasive changes in current Federal R&D and Human management systems. . . . with "more focused mandates, less bureaucratic and unproductive overhead and improved management practices". The report perceives the current Civil Service system guiding the management of government scientists and engineers to be largely an extension of general government personnel policies and unsuited, even counterproductive, for the management of the unique resource needs of Federal intramural S&T (Science and Technology) organizations. It recommends a "compre-

hensive super framework for the establishment of a dynamic new Federal Research and Development System”, that is:

- a) the establishment of S&T Institutes as distinct organizations, one for each department with S&T;
- b) the structuring of these institutes as well as the systems of management accountability, evaluation, implementation and funding that will be required for these institutes.

The report sees this restructuring happening over the next five years when, as we may remind you, S&T activities are to be kept below the inflation rate of 3% according to the February 1991 federal budget.

The Lortie Report is clearly the Government’s attempt to extricate itself from the S&T pit it dug itself into since it came to power in 1984. At that time, the Prime Minister had recognized R&D as key to Canada’s future and at the top of the national agenda. Now, although the Lortie Report suggests raising Gross Expenditures on Research and Development (GERD) from 1.3% of the Gross Domestic Product (GDP) to 2.5%, the government continues to do exactly the opposite by bringing GERD as a percentage of GDP down to 1.29% and falling.

C - Political “Gamesmanship” in Resource Allocations

One thing we can be sure of is that the politicians’ allocations will be pragmatic when faced with a multitude of competing demands for funds by universities, defense, housing, welfare etc. They will rationalize whether or not an extra pound of science will bring more votes than a pound of housing? Or is the worth of biology (Entomology, for instance) comparable with that of physics? While politicians are supposed to be concerned with the needs of the country as a whole, House of Commons debates seldom feature education, research and science. And when it comes to science, most people don’t care and politicians don’t dare. Their response to science needs and events are generally fickle. And this is not a feature particular to the present government. The last four governments have lacked the wisdom, vision and expertise to, once and for all, place Canadian Science on a solid footing; one that would provide continuing, stable support for this Key National Knowledge-based activity. Political expediency, in particular prior to a general election, often turns to prestigious projects such as a “high energy accelerator or a space station” at the expense of current in-house budgets of Federal Departmental laboratories, the National Research Council (NRC) and National Science and Engineering Research Council (NSERC).

II - THE ESC RESPONSE TO DOWNSIZING

In assessing the impact of reduced numbers of federal entomologists and their research, a look at the size of our membership over the past few decades is revealing. In 1963, the year of our Centennial, there were approximately 500 professional entomologists in Canada out of an ESC membership of 722. Nearly half of these were employed by the federal government with the remainder, in descending order of numbers, employed by educational institutions, provincial governments and industry. Nearly two-thirds of those federally employed were above the age of 44 years. Today’s membership is about 545 of which 300 or less are professionals serving the same employers. In Agriculture Canada the reduction is of the order of 46% and in Forestry (June 1989 ESC *Bulletin*) the spruce budworm team alone has been reduced by 50%. The exodus has been on for some time; replacements are wanting.

In 1970, as your President, I wrote to the Honourable Pierre Trudeau about the Society's concerns regarding this problem. Similarly in 1976, Dr. G.S. Cooper reiterated the same concerns to the Prime Minister. These efforts were futile. So much for the power of our Society acting alone. We should also recall that then (with the Lamontagne report) as now (with the Lortie report) the Government was being advised to transfer its in-house research capability to the private sector. In other terms it was to make Government R&D subject to a MAKE OR BUY policy.

It is clear that whatever case is made to the government for support, the need for the ESC to belong to a large body of biologists, to safeguard for the national good the continuity and stability of entomological research in Canada, is paramount. Accordingly, we have joined in 1990 the Canadian Federation of Biological Societies (CFBS). The Federation has a permanent office in Ottawa, represents 6000 scientists working in all Biological fields of importance to Canada and has the potential to be collectively a more effective lobby for our cause than if we were acting alone.

Some of you will remember our past efforts, in this regard, with the help of the Biological Council of Canada (BCC) and the Association of the Scientific Engineering and Technological Community of Canada (SCITEC). The weak link at that time was the small number of scientists who got involved. Furthermore, we recall how engineers balked at a fee of 15¢ per member to belong to a national voice for science. A similar scenario happened when the Government called a meeting of all science groups at the University of Ottawa in the context of the Lamontagne commission. The scientists' side was poorly attended. So much so that a member of parliament, at the time an Opposition Science Critic, confided that our 'timid efforts' at reversal had lost the day for us. After all, how could he fight our cause in the House of Commons if the scientific collectivity could not itself mount a strong case for Science.

III - NEW ENTOMOLOGICAL RESEARCH FRONTIERS

Urgent public demands to protect and save the environment from contamination from a number of practices that include agriculture date now from the early 1970s. Recall that the federal Ministry of Environment was created about that time. While there are many avenues to right things that have gone wrong with our ecology, it is clear that food safety, fertile land and forest resources are in Canada areas of paramount and continuing need of entomological research. People expect environmentally and nutritionally safe methods of crop and animal production and protection. The integrity of the food chain on this planet and for all living things is at stake in view of so many chemicals now found practically everywhere.

A review of entomological research of the past half century revealed that pest control methods have provided acceptable and relatively safe foods to the consumers. However, environmental contamination may have reached a critical point in some situations. For example, it is known that the European Corn Borer causes damages amounting to several hundreds of millions of dollars annually in North America. Research on the use of agents other than chemical pesticides such as insect parasites and predators have had limited impact on borer management. The full potential of self-perpetuating natural enemies has not yet been attained. Entomopathogens, bacteria, protozoans and viruses appear to offer greater control levels than traditional insect parasites and predators. They can be cultured safely, are self-perpetuating and are compatible with environmental safety. For example, *Bacillus thuringiensis* (BT) has been successful for the control of the codling moth on apple and the spruce budworm on balsam fir. It should suffice to say that more of such opportunities should be envisaged and capitalized on.

To our knowledge, research in the field of biology is now at the stage of development reached by physics and chemistry 100 years ago. The more sophisticated instrumentation now available to biologists should open the inner secrets of cell components. For example, scientists at CSIRO in Australia have recently transferred genes from *B. thuringiensis* to cotton. This gene produces the toxin which then kills the *Heliothis* cutworm. The caterpillars which account for 80% of Australia's cotton pest problems also attack other crops such as corn, soybeans, sorghums and sunflowers.

The bio-engineering approach offers great opportunities for developing new entomological solutions to present and future crop and animal pest problems. It should also be applied with renewed efforts at breeding crop plants with built-in resistance to diseases and insects. Host plant resistance is still in our opinion one of the greatest proven pathways to pest and diseases containment. However, the process does require full interplay of plant breeders with other disciplines such as Entomology, Pathology and Statistics. The results are usually of great economic returns and always compatible with the environment.

It is in these pathways of research that we should hope to find the new alternatives to crop and animal management. Our collective safe survival will require no less.

IV - INDUSTRIAL AND PRIVATE SECTOR R&D IN CANADA

As already intimated, the Prime Minister's objective to double Canada's R&D spending during his first term, 1984-89, did not materialize. Nor to any great extent did his plan to help the private sector take up the slack in Government R&D. Lately, we were disappointed to hear his junior minister of science, William Winegard, declare that "putting more money in Government research is not the way to go". Yet, he bemoaned the fact that "the private sector in this country has not done the R&D job and should do more". Frankly, we are disappointed in Mr. Winegard who, after having occupied the highest office at Guelph University, shows so little understanding of the nature and requirements of Canadian Science and Scientists. His put-down of government research is unwelcome, to say the least, and is undermining the very base of much needed Canadian R&D.

Our view point is in fact reaffirmed when Industry representatives contend that "they need sustained Government help to respond and can't effectively act as long as the Government's effort remains below that of the more industrialized countries". John Macdonald's contention, from a Vancouver based computer company, suggests that the Government is schizophrenic on this point. And symptomatic of this is the Government's announcing in the April 27, 1989 budget, a Government-Industry program of about \$23 million annually, well received and well liked by Industry, and which brought a return of 10 to 1 on public funds invested, only to have it chopped before it had time to get off the ground.

Part of the problem according to David Vice of the Canadian Manufacturers' Association is that "Canadian Industries have not emphasized research because they have not had to. They have grown rich on natural resources. And our branch plant economy has not helped since 46% of Canadian Manufacturing Corporations are foreign controlled and most do their research at their head offices". And this situation will certainly continue since recent U.S.A. policies on tax incentives will apply to R&D activities done at home rather than abroad. We see the prospects of Free Trade accentuating further the trend already in place. Would you believe that some politicians would rather fill our new technology needs by purchasing technology abroad and developing it here? They say that strategy would reduce

lead time and costs. Of course, we all know that Japan imported plenty of technology from abroad to launch its High-Tech Industry. However, that was many years ago. Nowadays, with a Science City in Tsukuba and their R&D leading the world in so many ways, Japan is out in front and running ahead. But a formula that suits the special goals and ambitions of another country is not necessarily the one to meet Canada's present R&D needs. We note from a recent survey of Canadian R&D performers done by the Conference Board of Canada (Roland Anderson: *Globe and Mail* 1986) that 77% of the respondents would not be able to substitute acquired or "off-shore" technology for "in-country" innovations. This we knew to be particularly true for much, if not all, of our Canadian Biological R&D.

V - CONCLUSIONS

The facts reviewed in this paper lead us to the following conclusions:

1. The present Government, sensitized to a large National debt and deficit, will not reverse the Federal cuts in R&D that have resulted in a significant decline in Government in-house science and R&D generally. Yet, these reductions are contrary to the wisdom accepted by the majority of Canadian scientists and a large segment of the Industry that our national spending on scientific research should not be reduced but increased. In defense of this stand, scientists have not been well served by the Ministry of State for Science and Technology. It operates these days with slender resources and even more slender scientific credibility.

2. Government attempts to enlist the Industry and Private sectors to take up the slack in Federal in-house R&D have not had much success, largely because of the fragmentation of that Industry, the frightening degree of foreign ownership, the lack of adequate and sustained Government support and the well-known heavy taxation. Some "high-tech" and pharmaceutical companies are responding, none can claim to support, to any extent, R&D in the environmental sciences that are so critical to the maintenance of our sustaining natural resource base. Furthermore, Industry research cannot be built up by shutting down the very Government laboratories that have been put in place precisely to support and make viable our Canadian Industries.

3. Entomologists can no longer alone fight the Government "funding cut game". Our activities in this matter must now be part of the collective R&D action being mounted by the Canadian Federation of Biological Societies we recently joined. Their pre-election strategy is particularly worthy of strong support, notably, that Biologists, Entomologists in our case: (a) meet with every political candidate in the next federal election, particularly in University towns across the country, and get from such candidates their R&D policy commitments; (b) join political parties to effectively debate R&D issues within these organizations; (c) stand for election to Parliament so that Science would have a direct voice in party caucuses and in the House of Commons where fundamental decisions concerning R&D are debated and made.

4. While Government support for our services has been significantly reduced, national environmental contamination problems requiring entomological solutions remain and new ones are mounting. In particular, research on alternatives to chemical pest control in Agriculture, Forestry and Wildlife continues to grow and be an urgent area of crying need if we are to correct an ecology gone wrong and a dangerously contaminated food chain. In making this point to our political masters, we must be bullish if we hope, at all, to have them regain their senses about damage done and repair needed, in particular, to Canada's Biological R&D capability. For Canada this is the only research sector available to the new

generation of biological scientists and truly owned by, and of direct service to, Canadians.

Our overall conclusion is that the Federal Government has to do a higher proportion of in-house R&D in this country than that performed by Governments of more populous, heavily-industrialized nations. It cannot and must not be allowed to wiggle out of that national responsibility. Like it or not, the Government is destined to remain Canada's predominant financier, the final arbiter of what research and development work will be done in this country to foster the long-term needs of our society. Regrettably then, the "patchwork quilt" science policies of recent times are likely to remain and continue despite the fact that an untrammelled research effort is fundamental to the definition of our national identity.

One additional thought, since Governments of developed countries the world over remain the largest funders of Research and Development in biology, they, who continue this support, not Canada, will be in the fore-front of the new technology urgently needed for production, protection and utilization of plant and animal crops. The U.S.A. with its continued outstanding commitment to funding basic research is in a pre-eminent position to maintain leadership in, for example, the burgeoning field of biotechnology, an area of research which, if capitalized on in this country, would yield untold benefits for Canadian agriculture and other Canadian resource-based industries, particularly in the upgrading of our national environment.

PERSONALIA

Dr. Roger G.H. Downer
Recipient of the Entomological Society of Canada
GOLD MEDAL
for Outstanding Achievement in Canadian Entomology



President John Laing (right) presenting Roger G.H. Downer (left) with the Gold Medal at the 41st Annual Meeting of the Entomological Society of Canada October 21, 1991 in Montréal, Québec

THE GOLD MEDAL Dr. Roger G.H. Downer

The 1991 recipient of the Entomological Society of Canada's Gold Medal for Outstanding Achievement in Entomology is Dr. Roger G.H. Downer, Department of Biology, University of Waterloo, Ontario. In presenting this award the Society recognises his important contributions as a researcher and teacher, as well as his dedicated service to science in Canada.

Roger Downer was born in Belfast, Northern Ireland in 1942. He completed both his primary and secondary education in Belfast, and received his B.Sc. (1964) and M.Sc. (1967) from Queens University in this same city. He then went to study with J.E. Steele at the University of Western Ontario, where he received a Ph.D. in 1970. Roger then accepted a position as an Assistant Professor at the University of Waterloo where he has remained to this day.

Dr. Downer has developed a research programme in insect biochemistry and physiology of truly international quality and is a member of the Insect Biotech Canada Centre of Excellence. He is an author of more than 120 papers in international journals and books and has served as editor on four books. The fact that Dr. Downer has hosted five sabbaticants and 11 postdoctoral fellows further reflects the high esteem that the international community has for his research programme. His excellent reputation has also resulted in many invitations to speak at meetings throughout the world. Roger's laboratory has also provided a most favourable environment for graduates, with 12 M.Sc. and 10 Ph.D. students having completed their training under his supervision. His talents as a teacher are also greatly appreciated by undergraduates, and in 1982 he was awarded the "Distinguished Teaching Award".

Dr. Downer has played a very active role at the University serving as Chairman of the Biology Department (1986-89), Acting Dean of Science (1989) and is now Vice-President (University Relations). Despite his heavy commitments to research, teaching and University administration, Dr. Downer has still found time to make significant contributions in other aspects of science. He is Associate Editor of the *Archives of Insect Physiology and Biochemistry*, has been Associate Editor of the *Canadian Journal of Zoology* (1985-88) and the *Bulletin of the Canadian Society of Zoologists* (1984-86), as well as Assistant Editor of *The Canadian Entomologist* (1985-87). Roger also served on the NSERC Food and Agriculture strategic grant committee (member 1986-89, chair 1989-90) and is currently a member of the NSF Regulatory Biology Grant Selection Panel (1990-92). Dr. Downer was President of the Canadian Society of Zoologists (1985-86) and served as Vice-President of both the Biological Council of Canada (1986-89) and the Canada Council of University Biology Chairmen (1987-89). Roger also gives willingly of his time to community service and is presently a member of the Cultural Development Committee and the Economic Development Council for the City of Waterloo.

There is no question that Roger has made significant contributions to Canadian science and this year the Canadian Society of Zoologists awarded him the Fry Medal. The Entomological Society of Canada is proud to recognise his achievements by naming Dr. Roger G.H. Downer as the recipient of the Gold Medal for Outstanding Achievement in Entomology for 1991.

LA MÉDAILLE D'OR Dr. Roger G.H. Downer

Le récipiendaire de la Médaille d'Or de la Société d'Entomologie du Canada pour contribution exceptionnelle à l'entomologie canadienne, édition 1991, est le Dr Roger G.H. Downer, du Département de Biologie de l'Université de Waterloo, en Ontario. En lui présentant ce prix, la Société reconnaît l'importance de sa contribution à l'entomologie canadienne en tant que chercheur et enseignant, ainsi que son dévouement au service de la Société.

Roger Downer est né à Belfast, en Irlande du Nord, en 1942. Il a complété ses études primaires et secondaires à Belfast et a obtenu ses B.Sc. (1964) et M.Sc. (1967) de l'Université Queens dans la même ville. Il alla par la suite étudier avec J.E. Steele à l'Université Western Ontario où il a obtenu son Ph.D. en 1970. Il accepta alors un poste de professeur adjoint à l'Université de Waterloo où il est demeuré jusqu'à ce jour.

Le Dr Downer a développé un programme de recherche de calibre international dans les domaines de la biochimie et de la physiologie des insectes et il est membre du Centre d'Excellence Insect Biotech Canada. Il est l'auteur de plus de 120 articles publiés dans des revues et livres internationaux et a agit en tant qu'éditeur pour quatre livres. Le fait que le Dr Downer ait été l'hôte de cinq professeurs en année sabbatique et 11 stagiaires post-doctoraux est le reflet du haut niveau d'estime qu'a la communauté scientifique internationale à l'égard de son programme de recherche. Son excellente réputation lui a aussi valu plusieurs invitations en tant que conférencier à des colloques à travers le monde. Son laboratoire s'est avéré un environnement hautement favorable aux 12 étudiants de maîtrise et 10 étudiants de doctorat qui ont complété leur formation sous sa supervision. Ses talents de pédagogue sont bien appréciés par les étudiants de premier cycle, comme en témoigne d'ailleurs le prix "Distinguished Teaching Award" qui lui a été décerné en 1982.

Le Dr Downer a joué un rôle actif au sein de l'Université, occupant les postes de Directeur du Département de Biologie (1986-89), Doyen des Sciences par intérim (1989) et, présentement, celui de Vice-Président (relations universitaires). En dépit de ses lourds engagements vis-à-vis de la recherche, de l'enseignement et de l'administration universitaire, le Dr Downer a réussi à investir du temps dans d'autres aspects importants de la science. Il est Éditeur associé de *Archives of Insect Physiology and Biochemistry*, il a été Éditeur associé du *Journal canadien de zoologie* (1985-88) et du *Bulletin de la Société canadienne des zoologistes* (1984-86), ainsi qu'Éditeur Adjoint de *The Canadian Entomologist* (1985-87). Il a aussi été membre (1986-89) et directeur (1989-90) du comité d'évaluation des Octrois Stratégiques du CRSNG (Food and Agriculture) et il est présentement un membre du NSF Regulatory Biology Grant Selection Panel (1990-92). Le Dr Downer a été Président de la Société canadienne des zoologistes (1985-86) et il a été Vice-Président à la fois du Conseil de Biologie du Canada (1986-89) et du Canada Council of University Biology Chairmen (1987-89). Le Dr Downer donne aussi généreusement à des services communautaires, et il est présentement membre du Comité de développement culturel et du Conseil de développement économique de la ville de Waterloo.

Il ne fait pas de doute que Roger Downer a contribué de façon significative à la science canadienne. D'ailleurs, la Société canadienne des zoologistes lui a, cette année, décerné la Médaille Fry. La Société d'entomologie du Canada est donc fière de décerner au Dr Downer la Médaille d'Or pour 1991 en reconnaissance de sa contribution exceptionnelle à l'entomologie canadienne.

Dr. Murray B. Isman
Recipient of the Entomological Society of Canada
C. GORDON HEWITT AWARD
for Outstanding Achievement in Canadian Entomology



John E. Laing (right) presenting Murray B. Isman (left) with the C. Gordon Hewitt Awards plaque
at the 41st Annual Meeting of the Entomological Society of Canada
October 21, 1991 in Montréal, Québec

The 1991 recipient of the Entomological Society of Canada's C. Gordon Hewitt Award for outstanding achievement in entomology by an individual under 40 is Dr. Murray B. Isman of the Department of Plant Science, University of British Columbia, Vancouver, British Columbia.

Dr. Isman was born in Vancouver on June 14, 1953. He received his B.Sc. (Zoology) from the University of British Columbia in 1975. His M.Sc. (Zoology) awarded by the same institution in 1977 followed research on "Aspects of the chemical ecology of lygaeid bugs feeding on milkweeds in central California" supervised by Prof. G.G.E. Scudder. He was awarded his Ph.D. in Entomology in 1981 by the University of California following completion of his thesis on "Toxicity of tomato leaf phenolics to the fruitworm, with respect to their role in host resistance". This research was supervised by Professor S.S. Duffey at Davis.

Following Postdoctoral research with Dr. E. Rodriguez at the University of California, Irvine, Dr. Isman returned to the University of British Columbia in 1983 as an Assistant Professor in the Department of Plant Science. He was promoted to Associate Professor in 1989.

Dr. Isman's research has continued to be centred in insect chemical ecology, spanning the complete spectrum from basic (comparative studies of fate and metabolism and mode-of-action of natural products in insects) to applied (field and greenhouse trials to determine efficacy of experimental botanical insecticides). He has 43 publications in refereed journals, books and conference proceedings, and has been an editor of five major works in insect chemical ecology. Three of these, the multi-authored

review of *Insect Chemical Ecology* for *Experientia* in 1989, *Modern Phytochemical Methods* published in 1991, and the book coedited with the 1990 Hewitt Award winner Bernard Roitberg, entitled *Evolutionary Perspectives in Insect Chemical Ecology* to be published early in 1992, are very significant contributions to entomology.

Murray Isman has received invitations to and participated in symposia of international scope organized by entomologists, chemists and ecologists. He has also given invited lectures in Belgium, Israel, Poland, Switzerland, Thailand and West Germany. These are clear indicators of his internationally recognized reputation and the interdisciplinary nature of his nature.

Dr. Isman is an excellent teacher at both the undergraduate and graduate level. His teaching involves courses in Insect Physiology, Economic Entomology, Pesticides (Toxicology and Use), and Crop Protection. He has supervised 2 M.Sc. and 3 Ph.D. students, and has attracted over \$1 million in extramural grants. He has received NSERC operating, equipment and strategic grants, as well as cooperative grants with industry. In addition, he has had NATO Collaborative Research Grants to work in Germany with Dr. Peter Proksch, and IDRC Research Grants to work in Thailand with Dr. Pichaet Wiriyachitra.

Dr. Isman is a director of the Professional Pest Management Association of British Columbia, has been President of the Entomological Society of British Columbia, and is currently President of the Phytochemical Society of North America. He is the first entomologist to hold this position in the 31-year history of the latter society.

In his spare time, Murray Isman talks to the general public on household and garden pest problems and control methods, as well as the health effects of pesticides. He is constantly interviewed on local TV and radio shows, and makes regular appearances on CBC, including "The Journal" and "Break-through".

The Entomological Society of Canada takes great pleasure in presenting the C. Gordon Hewitt Award to Dr. M.B. Isman in recognition of his outstanding contributions to Canadian entomology.

LE PRIX C. GORDON HEWITT
Dr. Murray B. Isman

Le Prix C. Gordon Hewitt 1991 de la Société d'Entomologie du Canada été accordé à Monsieur Murray B. Isman du Département des Sciences botaniques de l'Université de Colombie-Britannique a Vancouver; ce prix est décerné chaque année a un chercheur de moins de 40 ans pour un travail particulièrement remarquable en entomologie.

Monsieur Isman est né a Vancouver, Colombie-Britannique, le 14 juin 1953. Il est titulaire d'un Baccalauréat ès Sciences (Zoologie) de l'Université de Colombie-Britannique (1975). Une Maîtrise ès Sciences (Zoologie) lui a été accordée par la même institution en 1977 à la suite d'une recherche intitulée "Certains aspects de l'écologie chimique des lygaeidés nourris d'asclépiades dans la Californie centrale" et supervisée par le Professeur G.G.E. Scudder. Il a obtenu un Ph.D. en entomologie de l'Université de Californie en 1981; sa thèse s'intitulait: "Toxicité des produits phénolés des feuilles de

tomates pour la Noctuelle de la tomate et influence sur la résistance de l'hôte''. Cette recherche a été menée sous la direction du Professeur S.S. Duffey à Davis.

Après un stage post-doctoral avec le Professeur E. Rodriguez à l'Université de Californie, Irvine, Monsieur Isman est revenu à l'Université de Colombie-Britannique comme professeur adjoint au Département des Sciences botaniques; il y est maintenant professeur agrégé depuis 1989.

La recherche de Monsieur Isman est toujours centrée sur l'écologie chimique des insectes et couvre tout un éventail de domaines, de la recherche fondamentale (études comparatives du sort, du métabolisme et des mécanismes d'action de produits naturels chez les insectes) à la recherche appliquées (expériences en nature et en serre destinées à déterminer l'efficacité des insecticides botaniques expérimentaux). Il a maintenant 43 publications à son crédit dans des revues avec jury, dans des livres et dans des compte-rendus de conférences, et il a assuré la coordination de cinq travaux d'envergure en écologie chimique des insectes. Trois de ces travaux, *Ecologie chimique des insectes*, une synthèse produite par plusieurs auteurs et publiée dans *Experientia* en 1989, *Méthodes phytochimiques modernes*, publié en 1991, et *Perspectives évolutives en écologie chimiques des insectes*, livre produit en collaboration avec Bernard Roitberg, récipiendaire du Prix Hewitt 1990 (à paraître au début de 1992), sont des contributions très importantes en entomologie.

Murray Isman a participé à des symposiums d'intérêt international organisés par entomologistes, des chimistes et des écologistes. Il a également été invité à donner des conférences en Belgique, en Israël, en Pologne, en Suisse, en Thaïlande et en Allemagne. Ces contributions font foi de sa réputation internationale et de la nature interdisciplinaire de ses recherches.

Monsieur Isman est un professeur très apprécié à fois des étudiants diplômés et des étudiants du premier cycle. Il donne des cours sur la physiologie des insectes, l'entomologie économique, les pesticides (toxicologie et utilisation) et la protection des récoltes. Il a dirigé les travaux de cinq étudiants gradués, deux en maîtrise, trois au Ph.D. et a obtenu plus de 1 million de dollars de subventions. Il a reçu des subventions du CRSNG, subventions pour dépenses courantes, subventions d'appareillage, subventions stratégiques, de même que des subventions cooperatives avec le secteur industriel. De plus, il a eu des fonds de recherche de l'OTAN pour travailler en Allemagne avec le Professeur Peter Proksch, et des fonds de recherche IDRC pour travailler en Thaïlande avec le Professeur Pichaet Wiriyachitra.

Monsieur Isman est directeur de l'Association professionnelle pour le contrôle des organismes nuisibles en Colombie-Britannique; il a été président de la Société d'Entomologie de la Colombie-Britannique et est actuellement président de la Société phytochimique de l'Amérique du Nord. Il est le premier entomologiste à occuper ce poste depuis la fondation de cette société il y a 31 ans.

Dans ses loisirs, Murray Isman dispense au public des informations sur les problèmes que posent les organismes nuisibles dans les maisons et les jardins, sur les moyens de les contrôler et sur les effets des pesticides sur la santé. Il est souvent l'hôte d'émissions de télévision et de radio locales de CBC, notamment "The Journal" et "Breakthrough".

La Société d'Entomologie du Canada est fière de présenter le prix C. Gordon Hewitt à Monsieur Isman en reconnaissance de ses contributions remarquables à l'entomologie canadienne.

Dr. Robert N. Coulson

Dr. Robert N. Coulson, Professor of Entomology, Texas A&M University, presented the 2nd annual H.R. MacCarthy Pest Management Lecture at the University of British Columbia, on October 1, 1991. Dr. Coulson's lecture, "Intelligent Geographic Information System for Integrated Pest Management", was attended by an audience of about 80, some of which had travelled from as far away as Summerland, B.C., and Washington State. The purpose of the Lecture, named in honour of Dr. MacCarthy, former head of Entomology, Agriculture Canada Research Station, Vancouver, B.C., is to present an annual lecture by a distinguished pest management scientist or practitioner.

IN MEMORY



Allison Deforest Pickett (1900-1991)

A.D. Pickett was born in Lower Kars, New Brunswick, in the St. John River Valley. In 1923, after six years as a ranch hand in the Canadian West, he enrolled in the farm course at the Nova Scotia Agricultural College and the following year he joined the degree programme which he continued at the Ontario Agricultural College. His junior and senior years were at Macdonald College and in 1929, he was granted a B.Sc. (Agr.) degree from McGill University with honours in entomology. During the summer of 1927 he was employed at the Dominion Entomological Laboratory located then at Annapolis Royal and in 1928, he was appointed as the first Provincial Agricultural Representative for Kings County, Nova Scotia.

From 1929 to 1939 he was the Provincial Entomologist for Nova Scotia. During the winters of these years he became an outstanding teacher of zoology and genetics at the Nova Scotia Agricultural College and during the summertime he was an excellent extension entomologist. From 1933 to 1937, he was Head of the Horticulture and Biology section. Concomitantly he pursued graduate work, set up a valid research programme on apple maggot strains, and wrote a thesis based on his work for which he received, in 1936, an M.Sc. degree from McGill University. His findings are still considered a major contribution to the knowledge of the taxonomy and biology of this complex of species.

In 1939, he was appointed Officer-in-Charge of the Dominion Entomological Laboratory and in 1950, when this unit moved to Kentville, he became Head and led the extremely productive team of researchers that were behind the tremendous success of the entomological research programme at the Kentville Research Station. Because of the impetus he gave to this programme until 1962, and the fact that his leadership in the integration of biological and chemical control of tree fruit pests resulted in international recognition, he was awarded an honorific D.Sc. from McGill University in 1959.

In 1962, he was appointed visiting lecturer at the University of California, and when he retired from Agriculture Canada in 1965, he became Head of the International Capsid Research Team at the Cocoa Research Institute in Ghana until 1968. What became known as Pickett's "modified spray programme" not only gave him international recognition, but it represented as well a stimulation and an inspiration for many entomologists of that time, and achievement we term today as pioneer work. This acclaim of the novel ideas and concepts of Pickett's team were echoed in Rachel Carson's wonderfully well written "Silent Spring" where she wrote in 1962: "Dr. Pickett himself was a pioneer in the field of working out sane methods of insect control that take full advantage of the predatory and parasitic species. The method which he and his associates evolved is today a shining model but one too little emulated. Only in the integrated control programs developed by some California entomologists do we find anything comparable in this country." His work was original and extremely significant and nowadays the testimony continues as a large number of recent books on Integrated Pest Management published in Canada, America, and abroad, are still referring to the Pickett's famous "Nova Scotia Experiment".

During his numerous years of happy retirement with his wife Virginia at their Deep Brook house and orchard in the Annapolis County of Nova Scotia, Dr. Pickett kindly accepted that many young entomologists would visit him and discuss their projects with the wise. In 1984, the Nova Scotia Agricultural College was the site of the official naming of its permanent insect collection in his honour. Thus the "A.D. Pickett Entomological Museum and Research Laboratory" was inceptioned. In 1986, Dr. Pickett wanted to acknowledge the support and inspiration he received during his long career from Professor W.H. Brittain who was Dean and Vice-Principal at Macdonald College from 1934 to 1955. Therefore he created an endowment under the name "W.H. Brittain Memorial Fund", the proceeds being earmarked to subsidize activities of the Museum. For all of his lifetime scholarly achievement, Dalhousie University of Halifax awarded him, in 1989, an honorary L.L.D. degree.

Allison Deforest Pickett was an Honorary Member of the Acadian Entomological Society as well as a Fellow and Honorary Member of the Entomological Society of Canada. He passed away quietly at the age of 91 years on the 18 September 1991. Here are some of his words published in 1949 under the title "A Critique on Insect Chemical Control Methods" (*Can. Ent.* **81**:67-76): "Finally, the writer believes we should accept as a fundamental concept the proposition that crops should be grown primarily for the purpose of satisfying man's food requirements and not as a means of making particular human activities commercially profitable regardless of the overall effect on human welfare."

Jean-Pierre R. Le Blanc
Professor of Entomology and Curator
A.D. Pickett Entomological Museum
and Research Laboratory
Nova Scotia Agricultural College
Truro, 28 October 1991.

NEWS OF ORGANIZATIONS

International Commission on Zoological Nomenclature

The following applications were published on 30 September 1991 in Vol. 48, Part 3 of the *Bulletin of Zoological Nomenclature*. Comment or advice on these applications is invited for publication in the *Bulletin of Zoological Nomenclature* and should be sent to the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD.

Case 2671 J.C. Megerle's (1801-1805) auction catalogues of insects: proposed suppression, with conservation of the specific names of *Saperda alboguttata* Megerle, 1803 (now in *Apomecyna*) (Coleoptera) and *Hippobosca variegata* Megerle, 1803 (Diptera)

I.M. Kerzhner

Zoological Institute, Academy of Sciences, Leningrad 199034, U.S.S.R.

Abstract. It is proposed that the extremely rare and usually neglected publications by Megerle (1801-1805) entitled *Catalogus Insectorum* and *Appendix ad catalogum insectorum* be ruled to be unavailable. Despite this, the conservation is recommended of two specific names, those of *Apomecyna alboguttata* (Megerle, 1803) (Coleoptera, CERAMBYCIDAE) and *Hippobosca variegata* Megerle, 1803 (Diptera, HIPPOBOSCIDAE).

Case 2751 *Paolia vetusta* Smith, 1871 (Insecta, Protorthoptera): proposed replacement of neotype by rediscovered holotype

C.G. Maples

Kansas Geological Survey, 1930 Constant Avenue, Lawrence, Kansas 66047, U.S.A.

Abstract. The purpose of this application is to replace the neotype of the Upper Carboniferous protorthopteran *Paolia vetusta* Smith, 1871 by the holotype which has recently been rediscovered in the collections of the Hanover College Museum, Indiana. The Dutch specimen designated as neotype by Laurentiaux (1950) is thought not to be conspecific with the holotype from Indiana.

Case 2755 *Eurymeloides* Ashmead, 1889 (Insecta, Homoptera): proposed confirmation of *Eurymela bicincta* Erichson, 1842 as the type species, and designation of a neotype for *E. bicincta*

M.M. Stevens

Yanco Agricultural Institute, New South Wales Agriculture and Fisheries, Yanco, NSW 2703, Australia

M.J. Fletcher

Biological and Chemical Research Institute, New South Wales Agriculture and Fisheries, PMB 10, Rydalmere, NSW 2116, Australia

Abstract. The purpose of this application is to designate a neotype in accordance with current usage for the eurymelid leafhopper species *Eurymela bicincta* Erichson, 1842, the type species of *Eurymeloides* Ashmead, 1889. Recognition of the syntypes would cause nomenclatural confusion within the family EURYMELIDAE Amyot & Serville, 1843.

Case 2754 *Scoparipes* Signoret, 1880 (Insecta, Heteroptera): proposed confirmation of *Cydnus latipes* Westwood, 1837 as the type species

Jerzy A. Lis

Department of Natural History, Upper Silesian Museum, Pl. Sobieskiego 2, 41-902 Bytom, Poland

Abstract. The purpose of this application is to confirm that the nominal species *Cydnus latipes* Westwood, 1837 is the type of the genus *Scoparipes* Signoret, 1880. The original designation was of a misidentified species.

Case 2756 *Proagoderus* Lansberge, 1883 (Insecta, Coleoptera): proposed conservation

Claudia Palestrini

Dipartimento di Biologia Animale, Università di Torino, via Accademia Albertina 17, 10123 Torino, Italy

Abstract. The purpose of this application is the conservation of the currently used subgeneric name of the dung beetle *Proagoderus* Lansberge, 1883 (SCARABAEOIDEA, genus *Onthophagus* Latreille, 1802) by the suppression of the unused senior subjective synonym *Onthotrogus* Motschulsky, 1859.

Case 1707 *Diabrotica undecimpunctata* Mannerheim, 1843 (Insecta, Coleoptera): proposed conservation of the specific name, and of the subspecific name *howardi* Barber, 1947

P.K. Tubbs

Executive Secretary, International Commission on Zoological Nomenclature, c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K.

Abstract. The purpose of this application is the conservation of the specific name of the North American leaf beetle *Diabrotica undecimpunctata* Mannerheim, 1843, which is an important agricultural pest. The unused name *Crioceris sexpunctata* Fabricius, 1792 is a senior subjective synonym of the subspecies *howardi* Barber, 1947 of *D. undecimpunctata*, and the proposed suppression of *sexpunctata* Fabricius conserves both *undecimpunctata* Mannerheim and *howardi* Barber.

Case 2767 *Drosophila hydei* Sturtevant, 1921 (Insecta, Diptera): proposed conservation of the specific name

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G. Bächli

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Abstract. The purpose of this application is to conserve the specific name of *Drosophila hydei* Sturtevant, 1921. *D. hydei* is widespread and is important in the field of genetics. It is threatened by the essentially unused senior subjective synonym *Drosophila marmoraria* Hutton, 1901.

Case 2761 *Chrysops atlanticus* Pechuman, 1949 (Insecta, Diptera): proposed conservation of the specific name

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Abstract. The purpose of this application is to conserve the well-known specific name of the saltmarsh deer-fly *Chrysops atlanticus* Pechuman, 1949. The unused name *Chrysops canifrons* Walker, 1848 is a senior subjective synonym for this species, and the suppression of this name is proposed. The deer-fly, *C. atlanticus*, is of economic importance since it is a persistent biter of humans in the salt marshes on the eastern coast of the United States (Hansens, 1980a; Pechuman, 1981).

Case 2535 Proposed precedence of some bee family-group names (Insecta, Hymenoptera): names based on *Colletes* Latreille, 1802, on *Paracolletes* Smith, 1853, on *Halictus* Latreille, 1804, on *Anthidium* Fabricius, 1804 and on *Anthophora* Latreille, 1803 to have precedence over some senior names

Charles D. Michener

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Abstract. The purpose of this application is to conserve the usage of some well known bee family-group names by giving them precedence over little used but senior names. It is proposed that COLLETIDAE Lepeletier, 1841 be given precedence over names based on *Prosopis* or *Hylaeus*; PARACOLLETINI Cockerell, 1934 over names based on *Neopasiphae*; HALICTIDAE Thomson, 1869 over names based on *Rophites* or *Sphecodes*; ANTHIDIINI Ashmead, 1899 over names based on *Stelis*; and ANTHOPHORIDAE Dahlbom, 1835 over names based on *Eucera*, *Xylocopa*, *Ceratina* or *Nomada*.

The following **Opinions** were published on 30 September 1991 in Vol. 48, Part 3 of the *Bulletin of Zoological Nomenclature*:

Opinion 1650. CYMATIINAE Iredale, 1913 (1854) (Mollusca, Gastropoda) and CYMATIINAE Walton in Hutchinson, 1940 (Insecta, Heteroptera): homonymy removed.

Opinion 1653. *Mirochernes* Beier, 1930 (Arachnida, Pseudoscorpionida): *Chelanops dentatus* Banks, 1895 confirmed as the type species.

Opinion 1654. *Fonscolombia* Lichtenstein, 1877 (Insecta, Homoptera): *Fonscolombia graminis* Lichtenstein, 1877 fixed as the type species.

Opinion 1655. *Curculio viridicollis* Fabricius, 1792 (currently *Phyllobius viridicollis*; Insecta, Coleoptera): specific name conserved, and *Rhyncolus* Germar, 1817: *Curculio ater* Linnaeus, 1758 designated as the type species.

Opinion 1656. *Longitarsus symphyti* Heikertinger, 1912 (Insecta, Coleoptera): specific name conserved.

Opinion 1657. *Colias alfacariensis* Ribbe, 1905, *Colias australis* Verity, 1911 and *Colias calida* Verity, 1916 (Insecta, Lepidoptera): availability of specific names confirmed.

CRITIQUE DE LIVRE

Bernard Werber 1991. *Les fourmis*. Albin Michel. Paris. 353 p.

Peu de temps avant que l'on apprenne dans le numéro de juin 1991 du "Bulletin of the ESA" que Bert Hölldobler et Edward O. Wilson avaient remporté le prix Pulitzer 1991 pour leur ouvrage monumental intitulé *The Ants*, un roman portant le même titre (mais en français...) paraissait chez Albin Michel. Le format et la présentation de l'ouvrage sont excellents, ce qui en rend la lecture agréable. Ce roman pourrait être considéré comme deux romans parallèles qui se rejoignent à la fin. Le grand public et le public averti aimera sûrement lire *Les fourmis*. Les héros du roman sont sans conteste les fourmis de diverses espèces, avec lesquelles un entomologiste marginal est parvenu à entrer en communication en déchiffrant leur langage sémi chimique. On y retrouve un fond souvent anthropocentrique, mais comment faire autrement pour rendre les fourmis sympathiques au lecteur ? J'ai trouvé quelques erreurs de faits dans le texte. Elles peuvent être justifiées dans le contexte d'un roman. J'ai aimé lire ce livre et en recommande la lecture.

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BOOK REVIEWS

Spivak, Marla, David J.C. Fletcher and Michael D. Breed (Eds.). 1991. *The "African" Honey Bee*. Westview Press (Westview Studies in Insect Biology), Boulder, Colorado. 435 pp., illustrations. Hardcover, US \$55.

Ever since the intentional introduction of the African honey bee subspecies *Apis mellifera scutellata* (formerly *adonsonii*) to South America in 1956, its establishment in the feral bee population and subsequent uncontrolled cross-breeding with other subspecies of bees already established in Brazil, the resultant Africanized honey bee offspring has been the centre of extensive apicultural research in the New World. *The "African" Honey Bee* has successfully brought together the large body of scientific information which has been generated since the Africanized honey bee made its debut. This book is well written and edited. The major subject headings and chapters within are balanced, thorough, well illustrated and provide extensive citation lists.

In the first chapter the editors provide some background information on the Africanized honey bee and an overview of the major subject areas to be covered in the book. The remaining 19 chapters, with contributions from 20 authors well known for their work on African/Africanized honey bees are divided into the following subject areas: **Part One - Systematics and Identification** (systematics - Daly; genetic characterization through DNA analysis - Hall); **Part Two - The Spread of Africanized Bees and the Africanization Process** (the interdependence of genetics and ecology - Fletcher; the Africanization process - Rinderer and Spivak; colonizing ability - Ratnieks; genetics and breeding - Page and Kerr; queen production after Africanized bees have arrived - Hellmich); **Part Three - Population Biology, Ecology, and Diseases** (internal colony dynamics - Winston; population biology - Otis; foraging behavior and honey production - Rinderer and Collins; Africanized honey bee ecology in tropical America - Roubik; bee diseases, parasites and pests - Shimanuki, Knox and De Jong); **Part Four - Defensive Behavior** (defensive behavior - Breed; genetics of defensive behavior - Collins/Rinderer

and Stort/Goncalves); **Part Five - Beekeeping in South America** (beekeeping in Brazil - Goncalves, Stort and De Jong; Africanized honey bees in Peru - Kent; beekeeping in Venezuela - Hellmich and Rinderer).

Although the content of this book is primarily scientific in nature the editors have included a wide range of scientific methods including both basic and applied research thus bridging a larger more diverse audience. The objective balance of this book allows it to be used as a compendium of information not only for scientists, students and regulatory officials actively involved in apicultural research, but also for those who want a current and balanced picture of progress in a subject area that, as the editors say, "has often been clouded with emotion". Finally, this book is a timely publication with the arrival of Africanized bee swarms in southern Texas in the fall of 1990.

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Gupta, A.P. (Ed.). 1990. *Morphogenetic Hormones of Arthropods, Volume 1, Part 2. Embryonic and Postembryonic Sources.* Rutgers University Press, New Brunswick and London. xii + 533 pp. Hardcover. US \$125.

This book, the second of the three parts of Volume 1, is another in the series that Professor Gupta has organized and edited over the past 15 years under the umbrella title Recent Advances in Comparative Arthropod Morphology, Physiology and Development. As in Part 1 (for review, see Gillott, C. 1990. *Bull. Ent. Soc. Can.* 22:217-218), the morphogenetic hormones of non-insectan arthropods are deliberately emphasized, though information on the juvenile hormone- (JH-) and ecdysteroid-producing glands of insects is also included.

The volume contains 10 chapters, the first of which deals with embryonic sources of morphogenetic hormones in all arthropods, while the remainder deal with the morphology, histology and ultrastructure of the various glands in specific arthropod groups. In Chapter 1 Dorn provides a comprehensive and insightful review of the embryonic origins of morphogenetic hormones (including neurosecretory factors), pointing out the major lack of knowledge for all arthropods other than insects. However, the start of Section 1.3.4.2. (neurohormones of chelicerates) in this chapter is confusing, citing a series of papers on myriapods and mixing up figure numbers. Also, in this chapter (and Chapter 4), all figures are grouped together after the text but before the References rather than being interspersed as occurs in other chapters. Cassier, in Chapter 2, gives an extremely detailed account of the structure of the corpora allata, spoiled unfortunately by some contradictions within the text and a plethora of proof-reading errors (approx. one third of the references contain at least one error, the 'classic' example being 'Williams, C.M. 1976. Juvenile hormone.????'). Chapter 3, by Descamps *et al.*, which is a comparative account of the cephalic neurohemal organs of myriapods, emphasizes how little is known of the roles of these organs in morphogenesis. Spaziani's analysis of the crustacean ecdysial gland (Y-organ) (Chapter 4) examines ultrastructure in relation to function, particularly in respect of the nature of the precursor molecule from which the ecdysteroids are synthesized. In Chapter 5 ('Ecdysial Glands and Ecdysteroids in Terrestrial Chelicerata') Juberthie and Bonaric adopt a somewhat different approach by discussing at some length the physiological roles of the glands and their products, following an account of their structure. Incidentally, R.P. Bodnaryk will be fascinated to know that his 'pet' insect (*Mamestra*

configurata) is really a butterfly! Seifert's description of myriapod ecdysial glands (Chapter 6) again shows what little is known of these glands in some groups (Chilopoda, Pauropoda and Symphyla), particularly as this is immediately followed by the 90+ pages devoted by Beaulaton to the molt glands of insects (Chapter 7). While the author provides a very detailed description of the structure of these glands, including the differences that are seen under varied physiological conditions, Beaulaton is careful to point out that for some insect orders our knowledge is still fragmentary. The three remaining chapters focus on Crustacea (8, androgenic glands [Payen]; 9, maxillary glands [Hinsch]; and 10, mandibular glands [also by Hinsch]). Payen's chapter describes the organogenesis and structure of the androgenic glands which, despite extensive searching, have been found only in Malacostraca. Only 10 of the 90 references cited by Payen were published post-1981. The title of Hinsch's first chapter 'Morphology, Histology, and Ultrastructure of the Maxillary Glands in Crustaceans; their Probable Function in Morphogenesis' is not only grammatically unsound but quite misleading. The chapter contains no evidence either that the maxillary glands are a source of a morphogenetic hormone or that the ecdysone they may excrete has a morphogenetic role. Chapter 10 summarizes the structure of the mandibular glands and indicates the (minimal) evidence which suggests they are homologues of the corpora allata.

The book also contains both a taxonomic index (that would have benefitted from cross-referencing of scientific and common names) and a subject index. Curiously, the page numbers given in the indices for entries from Juberthie and Bonaric's chapter (but no others) are anywhere from 9 to 12 pages 'high'!

As with Part 1, the quality of the science contained in the book is spoiled to some extent by the poor standard of editing. All chapters and both indices contain their share of 'typos' (some, as noted above, far more than their share); information is repeated both within and between chapters; and redundancy occurs (why, for example, is it necessary to include figures showing the chemical structures of ecdysteroids [Fig. 1.5] and juvenile hormones [Figs. 1.8 and 2.1] in a book dealing with gland morphology?).

By bringing together for the first time knowledge of the structures of morphogenetic hormone-producing glands of arthropods, the book points out the disproportionate emphasis given to studies on Insecta and may thereby stimulate research on other groups. Comparative invertebrate endocrinologists will find the book of interest and a valuable reference source. However, its high cost and narrow scope perhaps will restrict its appearance in the libraries of private individuals.

Cedric Gillott
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Vander Meer, R.K., K. Jaffe & A. Cedeno (Eds). 1990. *Applied Myrmecology. A World Perspective*. Westview Press, Westview Studies in Insect Biology. Boulder, Colorado. 741 pp. Numerous figures, including black and white pictures. 16 x 23.5 cm. US\$85. ISBN 0-8133-7785-4. Available from Westview Press, 5500 Central Avenue, Boulder Colorado, USA 80301.

The field of myrmecology was gratified in 1990 by the publication of two major books. The one of Holldobler & Wilson, **The Ants**, is already well acclaimed worldwide; it gives a thorough account of the general biology of these insects. The second presented hereafter remains less noticed though it should be considered as the foundation mark of a new specialized field, applied myrmecology.

During the last ten years the volume of pest ant literature has developed enormously; but this situation is not reflected either by the number of presentations or the attendance in entomological congresses. For example 1300 papers and four books have accumulated on leaf-cutting ants alone. The scope of applied myrmecology has broadened and “recognizes that many ant species have an important role in their ecosystems. These roles may eventually make them harmful to humans, or alternatively make them attractive to pharmacology or even integrated pest management programs” (the Editors).

The concept of this book came from a pest ants colloquium held in Caracas, Venezuela, October 1988. It represents the first effort to bring together a broad range of pest ant articles, arranged under a series of different topics. An unusual procedure but quite indicative and useful is developed: for each topic section the overview writer synthesizes its section and presents questions for the future.

The 67 papers are grouped in 7 sections: ant pests of the world (6), systematics and morphology (5), reproduction (5), natural history and biology (13), behavioral and chemical ecology (15), applied ecology (9), control (14). The first three appear rather limited in scope particularly for the listing of actual and possible pest species throughout the world as claimed. There is no report about problems and nuisances that ants may cause in colder regions. The list for the U.S. cannot be used without emendations and additions for Canada. If the selection of papers is representative of the actual state of knowledge on ant pests some subject areas appear underdeveloped, such as survey and systematics, reproduction and natural history, while chemical and applied ecology and control emerged stronger. Surprisingly enough the role and use of ants as predators particularly in forestry, as practiced in Europe for over 20 years, is not documented. So the term “applied myrmecology” covers in this context only the pest aspect of the field.

The book can be considered as an inclusive look at the pest ant of the tropical and warm temperate regions of the world, covering species found in South Africa, Australia, India, Europe, South America and U.S.A. for North America. The book draws on different disciplines as indicated by section topics to create, for the first time, a rather comprehensive picture of pest ant control for the mentioned regions. With both studies at species level and broad synthetic overviews, this is a useful book not only for entomologists but also for ethologists, biochemists, agricultural scientists, ecologists and others interested in the interactions between insects and the environment as well as human attempts to control or use those interactions successfully developed by highly evolved insects.

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Roush, Richard T. and Bruce E. Tabashnik. (Eds.). 1990. *Pesticide Resistance in Arthropods*. Chapman and Hall, New York and London. ISBN 0-412-01917-X, x + 303 pp. US \$57.50 CDN \$69.00.

A comprehensive text on resistance to pesticides in insects and arthropods has long been overdue. This multichapter book, edited by Richard Roush and Bruce Tabashnik, fills this niche very well. It is also a fitting tribute to one of the grandfathers of pesticide resistance, Roman Sawicki (to whom it is dedicated). Pesticide resistance is one of the most important aspects of pest management. A thorough understanding of the mechanisms involved and the application of this understanding to resistance

management is vital to continued sustainability of agricultural production in the face of increasing concerns for the environment and the need to minimize pesticide use. The up-to-date focus of the chapters, the depths of understanding of mechanisms, the very practical examples of resistance management and essential details of procedures such as bioassays make this book very useful for both the professional and the student.

In a style that has become very common in the last decade, this book is a collage of chapters by different authors, each writing in their area of expertise. The chapters are logically laid out, starting with a discussion of methods for detection of resistance in chapter one. As well as a description of the biological and biochemical assays used, this section analyses the principles on which these are based and points out the advantages and disadvantages of various assay systems. The second and third chapters review methods of investigating resistance mechanisms and the molecular mechanisms of resistance. Written respectively by Jeff Scott and David Soderlund with co-author Jeffrey Bloomquist, these sections focus on diagnostic tools for identification of mechanisms and an in-depth review of insecticide mechanisms of action that is useful to a broader audience. Chapters five and six continue the theme on general topics - population genetics and resistance modelling. Written by co-editor Richard Roush with co-author Joanne Daly and co-editor Bruce Tabashnik, these sections review useful background principles as well as the theoretical aspects of resistance management. Perhaps reflecting the newness of these applications to the study of resistance, these chapters lack the solidity of a long history of research but they do illustrate the increasing importance of understanding resistance from the point of view of the selected unit, the population. It is easy to become fascinated with the biochemical idiosyncrasies of resistance and forget the importance of the population and its response to selection pressures.

Chapters seven to ten focus in some detail on specific issues and examples of resistance. These sections are the basis for case histories and will be useful to educators and those in the business of pest management. Chapter seven, by George Georghiou is brief, but very thought-provoking. It raises the important issue of selection of pesticides in agriculture and points to the need for a more holistic approach to pest management in general. Chapter eight, by Marjorie Hoy, illustrates the importance of pesticide resistance in natural enemies of agricultural pests. Although there have been some notable successes, there seems little hope for the future usefulness and broad-scale application of this approach to integrated pest management. In chapters nine and ten, we are treated to case-histories of resistance management in two important pest complexes, the tobacco budworm-cotton complex and the apple orchard pest complex. The team of Fred Plapp, Clayton Campanhola, Ralph Bagwell and Billy McCutcheon illustrate the largely empirical approaches that were used to manage budworm resistance to pyrethroids in the southern U.S., while David Pree's chapter focuses on resistance in mites and spotted tentiform leafminer in Eastern North America.

The closing chapter functions to draw together much of the book to develop a philosophy of pesticide resistance management. By Brian Croft, this section helps to focus attention on the future and draws attention to the importance of temporal and spatial factors in resistance management as well as the need to consider economic and environmental factors in this process.

Although generally well written and easy to read, this book had several weaknesses. The seven page index hardly did the book justice and both the style and quality of the figures and graphs was inconsistent. Unusual in multiauthored books of this type were cross-references to other chapters. Cross-referencing helps to link such multidisciplinary texts into a more useful text but, to succeed, must be consistently applied. Almost all the cross-chapter references were between chapters written by the co-

editors and the other sections were virtually ignored. This cross-referencing highlighted a minor irritant - the header on each page listed the page number, the author/s and title of the chapter but failed to identify the chapter number. One had to page back to the table of contents to follow a cross reference. The second irritant was the use of a non-hierarchical notation system for section numbers in the chapters. Without backing up several pages, I was uncertain whether the indented “3” indicated section I A 3, II B 3 or III C 3 etc. Whatever happened to the tried and tested guide to cross references given by the legal (2.3.5) numbering system? Editors and publishers, please heed these cries.

Do I recommend the book? Yes, most certainly. It is a useful and current text that should be at hand for researcher, educator and student alike. It will be in my list of selected references next semester and I have already found the examples and case-histories useful in lectures.

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Hanski, Ilkka and Yves Cambefort, Eds. 1991. *Dung Beetle Ecology*. Princeton University Press, Princeton, New Jersey. ISBN 0-691-08739-3. xiv + 481 pp. Hard cover, US \$60.

This book is divided into three sections. Part one includes four introductory chapters: 1, The Dung Insect Community by Hanski; 2, From Saprophagy to Coprophagy by Cambefort; 3, Dung Beetle Population Biology by Cambefort and Hanski; 4, Biogeography and Evolution by Cambefort. Part two, entitled Regional Dung Beetle Assemblages, includes Chapters 5-15: 5, North Temperate Dung Beetles by Hanski; 6, South Temperate Dung Beetles by Lumaret and Kirk; 7, Dung Beetles in Subtropical North America by Kohlmann; 8, Dung Beetles of Southern Africa by Doube; 9, Dung Beetles in Tropical Savannas by Cambefort; 10, Dung Beetles in Tropical Forests in South-East Asia by Hanski and Krikken; 11, Dung Beetles in Tropical Forests in Africa by Cambefort and Walter; 12, Dung Beetles in Tropical American Forests by Gill; 13, Dung Beetles of the Sahel Region by D. & C. Rougon; 14, Montane Dung Beetles by Lumaret and Stiernet; 15, Native and Introduced Dung Beetles in Australia by Doube, Macqueen, Ridsdill-Smith, and Weir.

Part Three, entitled Synthesis, consists of five chapters, four coauthored by Hanski and Cambefort and the last, the Epilogue, by Hanski. These last chapters cover spatial processes, competition, resource partitioning and species richness and conclude with a discussion of topics needing further study.

Of the twenty chapters thirteen were authored or coauthored by Hanski or Cambefort. This unusually large input by the “Editors” of the book has seemingly produced a more uniform book than usual for a multi-authored work.

The book does not attempt to review all pertinent literature nor does it give equal coverage to all continents; for example, there is little mention of India’s rich dung beetle fauna, and while Kohlmann adequately covers Mexico, the coverage is less complete for the U.S. and Canada. In short the book reflects the interests of the authors and the areas in which they have worked. The overall quality benefits greatly from this approach, because all of the authors have assembled a large amount of specialized information, including some previously unpublished data, for specific localities. In some cases data from

different areas seem to be contradictory but, as the authors point out, this only reflects the need for further investigation. The concluding chapters do an excellent job of discussing and synthesizing the data given in the second part and suggest a number of problems needing further study.

For a multiauthored book it is of unusually high quality and almost entirely error free. The plates, tables and figures are excellent and contain a large amount of useful data, including lists of species, their frequency, habits, etc. Anyone interested in insect behaviour will enjoy at least some parts of the book and should find it an informative reference. Likewise ecologists studying competitive interactions, resource partitioning, species packing and similar subjects should find the information in the book useful. For people interested in dung beetles the book is essential. It should not be surprising that I recommend *Dung Beetle Ecology*.

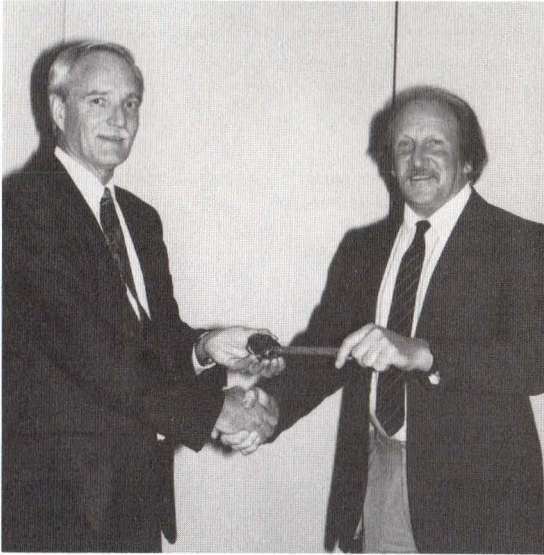
H.F. Howden
Carleton University
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PHOTOS



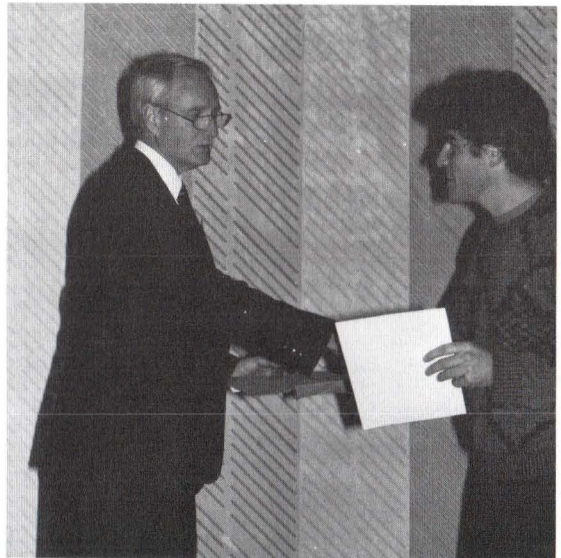
**Governing Board, Entomological Society of Canada, 1990-1991
41st Annual Meeting, October 20-23, 1991, Montréal, Québec**

Front row: P.W. Riegert (2nd Vice-President), J.E. Laing (President), R.A. Ring (1st Vice-President), G.H. Gerber (2nd Vice-President, elect), J.N. McNeil (Past-President)
Standing: S.A. Marshall, A.B. Ewen, A.S. McClay (hidden), R.G. Footitt, K.W. Richards, R.S. Vernon, D. Quiring, L.A. Gilkeson, D. Coderre, V. Behan-Pelletier, G. Boivin, P.G. Kevan, P. Fields, F.F. Hunter, R.J. West, B.D. Roitberg



Presidential Succession:
John Laing (left) passing the gavel
to incoming President Richard Ring
(right)

**Photographs from the 41st Annual Meeting of the
Entomological Society of Canada
October 20-23, 1991
· Montréal, Québec**



Award winner: Eric Lucas
Eric Lucas (right) of the Université
de Québec à Montréal receiving a
Postgraduate Award from Presi-
dent John Laing (right)

POSITIONS AVAILABLE

POSTDOCTORAL FELLOWSHIP

Development of Botanical Insecticides

Full-time support is available for a postdoctoral fellow to participate in investigations aimed at the discovery and development of new botanical insecticides and antifeedants for agricultural pests. The successful candidate should have a PhD in entomology or a related discipline, preferably with training in insect-plant chemical interactions (i.e. behavioral and/or physiological bioassays) and/or quantitative toxicology. Knowledge of insect physiology and plant biochemistry, and experience with analytical HPLC is highly desirable.

Position is available May 1, 1992; starting date is flexible. First preference will be given to Canadian citizens or landed immigrants, but others are encouraged to apply.

Applicants should send a statement of interest in this position via FAX, to be followed by their CV, reprints or preprints, abstracts of theses, unofficial transcripts, and the names, addresses and telephone numbers of three individuals familiar with their work, via airmail, to:

Dr. Murray B. Isman
Department of Plant Science
University of British Columbia
Vancouver, B.C., CANADA V6T 1Z4
Telephone: (604) 822-2329
FAX: (604) 822-8640

SCHOLARSHIPS AND GRANTS BOURSES D'ÉTUDES ET SUBVENTIONS

PESTCON GRADUATE SCHOLARSHIP

(Established 1987)

Support of Postgraduate Work in Pesticide Research

The Pestcon Graduate Scholarship has been established from the surplus funds generated by the VIth International Congress of Pesticide Chemistry held in Ottawa, Canada in August 1986.

The Scholarship is open to Canadian students (including landed immigrants) for graduate study in any area of pesticide research including alternative pest control strategies.

The Scholarship is tenable for a period of twelve months and has a value of approximately \$3,000. One Scholarship is awarded each year and may be held simultaneously with other scholarships, fellowships or awards.

Applications must be submitted in writing before **March 1** of each year, along with a curriculum vitae and brief description (500 words or less) of the research project undertaken and the progress to date. Applications must also be accompanied by an official transcript of the academic record of the candidate.

Applicants must also include the name and address of their supervisor and one other person whom they have asked to provide a confidential assessment of their ability to conduct research.

The name of the Scholarship holder will be announced prior to June 1, unless the Selection Committee feels that no suitable candidate exists.

Payment of the Scholarship will be made in two instalments, October 1 and January 1, on notification from the supervisor that the student is making satisfactory progress.

The Scholarship is administered by The Chemical Institute of Canada. All applications should be submitted to:

Program Manager, Student Affairs
The Chemical Institute of Canada
Suite 550, 130 Slater Street
Ottawa, Ontario
K1P 6E2

Grants for Nongame Wildlife Research in Minnesota

The Minnesota Nongame Wildlife Program is soliciting proposals for projects to be conducted during the 1992 and/or 1993 field seasons (or longer). Proposals should be for work contributing to the conservation and management of nongame wildlife (vertebrate or invertebrate) in Minnesota. High priority will be given to projects focusing on state endangered, threatened, or special concern species, native grassland species, wetland/aquatic species, and topics relevant to the management of state parks.

Appropriate projects may include censuses/surveys, studies of life history/population dynamics/habitat requirements, assessment or identification of habitat quality/quantity, design of long-term monitoring programs, development/evaluation of land use/management techniques, and a wide variety of other topics.

Awards average \$3000 per year, but requests up to \$10,000 per year will be considered. The deadline for submitting proposals is January 1, 1992. Decisions will be announced no later than March 1, 1992.

For program guidelines, proposal format, list of research ideas, E&T species list, and other information, please contact: Richard J. Baker, Nongame Wildlife Program, Minnesota Department of Natural Resources, Box 7, 500 Lafayette Road, St. Paul, MN 55155-4007 (or call at 612-297-3764). Funding comes from contributions to the Minnesota Nongame Wildlife Tax Checkoff and Minnesota State Parks merchandise sales.

Entomological Society of Canada Graduate Research-Travel Grants

Invitation for Applications

Preamble

To foster graduate education in entomology, the Entomological Society of Canada will offer two research-travel grants, awarded annually on a competitive basis. The intent of these grants is to help students increase the scope of the graduate training. These grants, up to a maximum of \$2,000, will provide an opportunity for students to undertake a research project or to do course work pertinent to their thesis subject that could not be carried out at their own institution.

Eligibility

To be eligible, a student must:

- 1) be enrolled as a full-time graduate student
- 2) be an active member of the Entomological Society of Canada

Format of the Application Form

The application form will be in the format of a grant proposal, where the applicant will provide the following information:

- 1) the subject of the thesis
- 2) a pertinent review of the literature in the field
- 3) a concise presentation of the status of the ongoing thesis research
- 4) a description of the research or course work to be undertaken, clearly indicating
 - a) the relevance to the overall goal of the thesis,
 - b) an explanation of why such work cannot be carried out at the student's own university, and
 - c) the justification of the site where the research/course work will be carried out
- 5) a budget for the proposed project
- 6) anticipated dates of travel and date on which grant money is needed.

The application form should also be accompanied by:

- 1) an up-to-date C.V.
- 2) a supporting letter from the senior advisor
- 3) When appropriate, a support letter from the scientist or Department Head at the institution where the applicant wishes to go.

Evaluation Procedure

The scientific merit of each application will be evaluated by a committee that has the option of sending specific projects out for external review by experts in the field. A constructive written report, underlining the positive and negative aspects of the proposal, will be returned to the applicant.

Timetable and Application Procedure

Application forms, which may be obtained from the Secretary of the Society, must be completed and returned to the Secretary of the Society by **15 February 1992**. The committee will evaluate all applications by 30 April 1992 and determine if, and to whom, grants will be awarded. The successful applicants will be informed immediately, thereby providing sufficient time for students wishing to start in the fall to make necessary arrangements. Grants must be used in the 12 months following the award. Recipients must provide a short final report, as well as a detailed list of expenses, in the three months that follow the trip. Any money not spent must be returned to the Society.

La Société d'entomologie du Canada

Allocations de Voyage pour Étudiants Diplômés

Appels pour Allocations

Préambule

Afin de promouvoir les études diplômées en entomologie, la Société d'Entomologie du Canada offrira deux bourses de voyage associées à la recherche. Celles-ci seront décernées annuellement sur une base compétitive. Le but de ces bourses est de permettre aux étudiants diplômés d'élargir les horizons de leur formation. Les bourses, d'une valeur maximale de \$2,000 permettront à des étudiants de réaliser un projet de recherche, ou de suivre des cours pertinents à leur sujet de thèse qui ne peuvent être entrepris dans leur propre institution.

Éligibilité

Afin d'être éligible, l'étudiant doit:

- 1) être inscrit à temps plein comme étudiant diplômé
- 2) être un membre actif de la Société d'Entomologie du Canada

Format du Formulaire de Demande

Le formulaire de demande sera dans le style d'une demande d'octroi et l'étudiant devra fournir les renseignements suivants:

- 1) le sujet de la thèse
- 2) une présentation de la littérature pertinente au domaine d'étude
- 3) une présentation concise du statut du projet de recherche en cours
- 4) une description de la recherche ou des cours qui seront entrepris, indiquant clairement
 - a) la pertinence des objectifs généraux de la thèse,
 - b) les raisons pour lesquelles ce travail ne peut être entrepris à l'université où l'étudiant est inscrit,
 - c) une justification concernant le choix de l'endroit où la recherche/les cours seront entrepris
- 5) un budget pour le projet proposé
- 6) dates prévues pour le voyage et date pour laquelle la bourse sera requise.

La demande devra aussi être accompagnée:

- 1) d'un C.V. complet mis-à-jour
- 2) d'une lettre de recommandation du directeur de thèse, et
- 3) lorsque convenable, une lettre d'appui d'un administrateur de l'institution dont le candidat désire fréquenter.

Évaluation

La valeur scientifique de chaque demande sera évaluée par un comité qui aura l'option d'envoyer des demandes spécifiques pour évaluation par un lecteur externe, expert dans le domaine. Un rapport écrit, contenant une critique constructive, faisant ressortir les aspects positifs et négatifs de la demande, sera retourné à chaque candidat.

Échéances et Procédures

Les formulaires de demande, qui peuvent être obtenus du Secrétaire de la Société, doivent être remplis et retournés pour le **15 février 1992** au Secrétaire de la Société. Le comité évaluera toutes les demandes pour le 30 avril 1992 et déterminera si, et à qui, les bourses seront décernées. Les candidats choisis seront contactés immédiatement, cela afin d'allouer suffisamment de temps pour les préparatifs nécessaires à un départ possible à l'automne. La bourse doit être utilisée dans les 12 mois suivant l'octroi. Les récipiendaires devront préparer un court rapport final, en plus d'une liste détaillée de leurs dépenses, dans les trois mois suivant le voyage. Tout argent non dépensé devra être remis à la Société.

Entomological Society of Canada Postgraduate Awards 1992

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 advanced degree in entomology. The awards will be made on the basis of high scholastic achievement.

Eligibility - The successful applicants must be either Canadian citizens or landed immigrants with Bachelor's degrees from Canadian universities. Applicants must begin their first year of postgraduate studies between 15 June 1991 and 31 December 1992. 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 student 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 **12 June 1992**.

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, 1992.

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 devote 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 publication costs, etc., will not, under any circumstances, be authorised.

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

Dr. R. West, ESC Secretary
Forestry Canada, Newfoundland and Labrador Region
P.O. Box 6028
St. John's, Newfoundland A1C 5X8

La Société d'entomologie du Canada Bourses pour Étudiants Post-Gradués 1992

Avis

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

Éligibilité - Les candidats doivent être canadiens ou résidents reconnus du Canada et détenir un baccalauréat d'une université canadienne. Les candidats doivent obligatoirement avoir débuté leur première année d'études post-graduées entre le 15 juin 1991 et le 31 décembre 1992, et effectuer leur étude et recherche dans une université canadienne. Les bourses ne seront accordées que lorsque les directeurs de Département auront certifié que les candidats choisis sont inscrits en première année d'un programme d'études supérieures, et ce avec tous les privilèges rattachés au statut d'étudiant gradué. Un étudiant qui n'a pu être admis à une École des Gradués, ou qui s'inscrit en vue de compléter l'obtention de crédits, n'est pas éligible pour recevoir une bourse.

Procédure - Les candidats devront soumettre leur candidature à l'aide du formulaire approprié et y joindre tous les documents requis. Les demandes devront être reçues par le Secrétaire de la Société au plus tard le **12 juin 1992**.

Sélection et remise des bourses - L'analyse des candidatures se fait par un comité de la Société, et l'annonce des récipiendaires se fera à la réunion annuelle de la Société ou ils recevront un certificat. Le paiement de la bourse aura lieu en octobre 1992.

Règlements

Autres sources de revenus - Un boursier pourra normalement donner des séances de cours ou des démonstrations et être auxiliaire de recherche jusqu'à un maximum de 200 heures par année, en autant que le Directeur de son département considère cela profitable et que ces tâches additionnelles ne nuisent pas au progrès de l'étudiant. Sauf pour ces assistances, un boursier devra consacrer tout son temps à ses études et recherches et n'accepter aucune autre rémunération. Il peut cependant jouir d'une autre bourse ou d'un prix.

Transferts - Les bourses sont accordées sous condition que les boursiers entreprennent des études graduées en vue de l'obtention d'un diplôme en entomologie au Canada. Les boursiers qui décideront de changer de champs d'études, ou transférer dans une université hors du Canada peuvent se voir retirer leur bourse. Après acceptation de la bourse, tout changement de programme d'études, de département ou université devra recevoir à préalable l'approbation du Comité de la Bourse de la SEC. Une telle demande doit être accompagnée de documents provenant des Directeurs des départements concernés.

Frais supplémentaires - Une bourse consiste en une somme d'argent total. En aucun cas la Société n'accordera de montant supplémentaire. Des frais additionnelles pour, par exemple, assister aux réunions scientifiques, payer des frais de cours, défrayer des coûts de publications, etc., ne seront autorisés sous aucune considération.

Toute correspondance relative aux bourses, incluant les demandes de formulaires doit être adressée a:

Dr. R. West, secrétaire SEC
Forestry Canada, Newfoundland and Labrador Region
P.O. Box 6028
St. John's, Newfoundland A1C 5X8
Fax 709-772-2576

Smithsonian Research Fellowships

The Smithsonian Institution announces its research fellowships for 1992-1993 in the fields of **History of Science and Technology**, Social and Cultural History, History of Art, Anthropology, **Biological Sciences**, Earth Sciences, and Materials Analysis.

Smithsonian Fellowships are awarded to support independent research in residence at the Smithsonian in association with the research staff and using the Institution's resources. Predoctoral and postdoctoral fellowship appointments for six to twelve months, and graduate student appointments for ten weeks are awarded. Proposals for research in the following areas:

History of Science and Technology:

History of computers, communication, and society; history of agriculture; air and space; electrical technology; engineering; industrial archaeology; mathematics; medicine and pharmacy; natural history; physical sciences; social dimensions of science and technology; and transportation.


Biological Sciences:

Animal behaviour and pathology; ecology; environmental studies; evolutionary biology; marine biology; natural history; paleobiology; systematics; and tropical biology.

Applications are due January 15, 1992. Stipends supporting these awards are \$26,000 per year plus allowances for senior postdoctoral fellows; \$21,000 per year plus allowances for postdoctoral fellows; \$13,000 per year plus allowances for predoctoral fellows; and \$3,000 for graduate students for the ten-week tenure period. Pre-, post-, and senior postdoctoral stipends are prorated on a monthly basis for periods less than twelve months.

Awards are based on merit. Smithsonian fellowships are open to all qualified individuals without reference to race, colour, religion, sex, national origin, age, or condition of handicap of any applicant. For more information and application forms, please write:

Smithsonian Institution
Office of Fellowships and Grants
Suite 7300
955 L'Enfant Plaza
Washington, D.C. 20560



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UPCOMING MEETINGS / RÉUNIONS À VENIR

The New York Natural History Conference

April 29-May 1, 1992

Albany, New York

This conference will allow scientists to present information on natural history research in New York State. The symposia being organised will center on advances in bird biology, cave biology and ecology, entomology, biology of exotic species, intraspecific variation in fishes, herpetology, biology of molluscs, biology of rare species, biology of Quaternary vertebrates, ecology of streams and lakes, biology of fire-structured pine communities, natural history of wetlands/peatlands, zooarcheology, the Hudson River and Lake George.

CONTACT: The New York State Biological Survey, Rm. 3132 CEC, New York State Museum, Albany, NY 12230 (Tel.: 518-474-5812)

The North American Benthological Society

May 26-29, 1992

Louisville, Kentucky

The North American Benthological Society announces its 40th Annual Meeting, to be held in Louisville, Kentucky on May 26-29, 1992. A number of workshops, invited symposia, and contributed sessions are planned to cover topic areas such as: "Biological Assessment of Large Rivers", "Current Efforts in Freshwater Conservation Policy", "Taxonomy of Water Mites", "Federal Agency Support for Freshwater Research", "GIS Workshop", "Design and Use of Artificial Streams", and "Ecology and Control of Exotic Species". The deadline for abstract submission is 10 January 1992. Guidelines for abstract preparation can be obtained by contacting the Program Chair.

CONTACT: Dr. James H. Thorp, Program Chair, Water Resources Laboratory, 151 Chemistry Building, University of Louisville, Louisville, KY 40292 USA. (Tel.: 502-588-6731; FAX: 502-588-0725)

MISCELLANEOUS

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ENTOMO-L ELECTRONIC MAIL NOTICE BOARD

At the request of the Entomological Society of Canada, an electronic mail (E-mail) notice board has been established. It is intended to be a means of exchanging entomological information and views, for posting announcements of conferences, position openings etc., and general communication.

So far the notice board has been operating well for about 2 months and has over 30 subscribers. Discussion on this has embraced such diverse topics as living insect museums, pesticides, biocontrol, conservation issues, life-cycles, computer mapping, as well as conference announcements, general information, position advertisements, and insect fiction.

The notice board is intended to be interactive, so please participate and enjoy sharing your ideas, questions, and expertise.

To subscribe, at no cost in most places, is simple. By using BITNET or NETNORTH, or other electronic mail networks with access to BITNET one can join the subscribers by the following:

Send your electronic mail message to:

**LISTSERV@VM.UOGUELPH.CA
or LISTSERV@UOGUELPH**

the address may have to be adapted to fit E-mail networks other than BITNET/NETNORTH.

Your actual message, after the headers etc. should read:

“sub entomo-l **your name**”

and you should be enrolled. To become dis-enrolled send the following message to LISTSERV as above:

“signoff entomo-l **your name**”

To send messages to the notice board use the following address:

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and proceed as for any other message on E-mail to friends, etc.

If you have problems with using E-mail, or are not familiar with it, I suggest you talk to someone in Computing Services. It should take only about 1/2 hour for you to get started.

The network may be difficult to reach from some organizations (e.g. Canadian government agencies) as their E-mail systems are not linked to BITNET or equivalent.

If you would like more information, please contact me by pulmonate post (snail mail), by E-mail, FAX, or telephone Dr. Peter G. Kevan.

Mail: Dept of Environmental Biology, University of Guelph, Guelph, ON, N1G 2W1
E-mail: EVBKEVAN@VM.UOGUELPH.CA or @UOGUELPH
FAX: 519-837-0442
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Bulletin Editor: F.F. Hunter
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Cover Design: R. Thiebaut
Published by: The Entomological
Society of Canada / La Société
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