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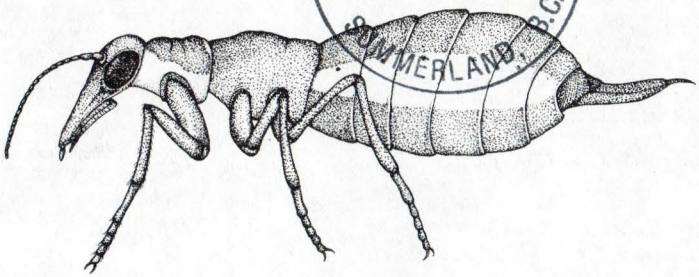
BULLETIN



ENTOMOLOGICAL SOCIETY OF CANADA
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA

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BULLETIN

VOL 21 (4) - December/décembre, 1989

(Continued on Inside Back Cover)

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BULLETIN

VOL 21 (4) - December/décembre, 1989

(CONTINUED)

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EDITORIAL

A Fable

Once upon a time in a cold and vast land, the learned scientists were dismayed. Nobody seemed to like, understand or respect them and gave them very little money to do their work. This land had been ruled by an intellectually inbred line of politicians, lawyers, businessmen and bureaucrats of who really didn't understand what the scientists were trying to do. We all know how politicians, lawyers, businessmen and bureaucrats treat those that they don't understand - very poorly.

For years the politicians, lawyers, businessmen and bureaucrats had changed positions of power. There was Pierre and Joe and Pierre again and John and Brian. But no matter who was in power, it seemed that they all tried to do everything they could to make the scientists' lives difficult. They said "Let's stop giving them money and give it to other businessmen and bureaucrats" and "Let's give them lots of money all at once so the scientists can fight over it and forget about what we're doing". But most of all they just said "Science? - who cares?"

Now the scientists were very unhappy. They talked to each other, cried on each other's shoulders, held workshops and symposia and conferences with each other and fought with each other over what little scraps were left over after the politicians, lawyers, businessmen and bureaucrats had finished giving money to everybody else. This made the politicians very happy. They liked it when people that they didn't like or understand fought with each other. It meant that nobody fought with the politicians.

Then one day, some of the scientists said "This is stupid. Why are we talking to each other when it's those politicians, lawyers, businessmen and bureaucrats that are making our lives difficult? We should get together and make their lives difficult for a while! What an original idea we've got here!" (Scientists can be naive at times.)

So some scientists decided to get together and form a large group to go to the politicians, lawyers, businessmen and bureaucrats and demand something be done. They asked other scientists to join them and stop whining to each other about how tough life was. But they said "This won't happen for free. It'll probably cost you about 28 pieces of silver each year." Then some of the scientists lost all control. "What?!?" they said "28 pieces of silver each year? What if I need a dinner out, or a new tie, or an oil change on my car - whatever will I do??" And then the scientists started to fight with each other all over again.

This made the politicians, lawyers, businessmen and bureaucrats very happy. They liked it when people that they didn't like or understand fought with each other.

R. Aiken
Mount Allison University

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Committees and Representatives
Entomological Society of Canada

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La Société d'entomologie du Canada

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C. Gillott, Saskatoon
D. Struble, Lethbridge

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B.J.R. Philogène (1991), Ottawa
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V.R. Vickery (1992), Ste-Anne-de-Bellevue
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R. Ring, Chair, Victoria (604-721-7104)
Two members to be selected by the Chair
President, *ex officio*

Annual Meeting/Réunion annuelle

C. Vincent, Chair & Regional Director, SEQ, St-Jean-sur-Richelieu (514-346-4494)
A. McClay, Regional Director, ESA, Vegreville (403-632-6761)
J. Doane, Regional Director, ESS, Saskatoon (306-343-8214)

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K. Pivnick, Saskatoon

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J. Turgeon, Chair, Sault Ste-Marie
Regional Directors, *ex officio*
President, *ex officio*

Publications

H.V. Danks (1991), Chair, Ottawa(613-954-2648)
V. Behan-Pelletier (1990), Ottawa
J.F. Sutcliffe (1990), Peterborough
L. Lesage (1991), Ottawa

Publications (cont'd)
T. Arnason (1992), Ottawa
T.S. Sahota (1992), Victoria
President, *ex officio*
Scientific Editor, *ex officio*
Bulletin Editor, *ex officio*
Managing Editor, *ex officio*
President, *ex officio*

Scholarships/Bourses d'étude
J.S. Hollebone, Chair, Ottawa (613-993-4544)
Affiliates' nominees

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Members selected by the Chair

Science Policy/Politique scientifique
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B. Frazer, Vancouver
S. Tobe, Toronto
N. Angerilli, Burnaby (Pest Management Policy Commitee)
J.M. Campbell, Ottawa (AASC and COPSE)
S.B. Hill, Ste-Anne-de-Bellevue (AASC and COPSE)
One to be announced
R. Ring, Second Vice President, *ex officio*
President, *ex officio*

Ad Hoc Committees/Comités Ad Hoc

Pest Management Policy/Politique sur la Lutte integrée
N. Angerilli, Chair, Burnaby
S. Hill, Ste-Anne-de-Bellevue
G. Konishita, Markham
L.A. Gilkeson, Sidney
R. Westwood, Winnipeg

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.S. Thompson, Charlottetown
W.S. Turnock, Winnipeg
R.S. 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
Two to be announced

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S.B. Hill, Ste-Anne-de-Bellevue,
J.M. Campbell, Ottawa

President's Update

Most scientists deplore the present situation with respect to science in Canada: generally described by insufficient funds and an overabundance of the "quick fix, big bang for a buck" mentality on the part of decision makers. This situation is not helped by the fact that, despite their genuine concern about issues such as environmental quality and global change, the majority of Canadians do not see science and technology as an integral part of our culture.

Earlier this year, members of the the ESC voted to apply for membership in an umbrella organisation, the Canadian Federation of Biological Societies. Subsequently, at the annual general meeting in St. John's, the membership approved an Executive proposal that for the next three years, if the ESC application is approved by CFBS, fees for all full and student Canadian members (we do not have to pay for ESC members that reside in other countries) will come directly from the ESC operating budget rather than through an increase in fees. The cost of the CFBS membership is considerably higher than that of the BCC, the previous umbrella organisation to which the ESC belonged, yet the potential benefits are considerable as the CFBS has an effective lobbying force in Ottawa and is active in the field of public awareness. However, the success of any umbrella organisation will depend upon the input of its member societies. The ESC must, together with the other member societies, play an active role within the CFBS. For the good of all scientific endeavours in this country, it is essential that (i) the role and importance of scientists is clearly brought to public attention, and (ii) lobbying efforts at the political level are effective and not synonymous with "Paying someone to pay for an MP's lunch..."(B. Frazer. 1989. *Bull. ent. Soc. Can.* 21: 36).

The ESC has shown considerable initiative and leadership in the past and must continue to do so, in parallel with its activities within the CFBS. The Biological Survey of Canada (Terrestrial Arthropods), which had its origins in the ESC, is presently being used as a model in efforts to establish similar surveys in botany and parasitology. If recent declarations in Ottawa concerning the priority to be placed on the environment are something more than just political rhetoric, the work of such surveys will be in great demand. How can one quantify faunal changes due to pollution/global warming or select suitable bioindicators if one has no idea of the community composition? Such truths seem to escape the understanding of many, particularly the decision makers. It is up to us to work for change but this will not happen unless all concerned scientists are willing to act. I therefore urge you to actively support the activities of the ESC, and the CFBS, in the years to come.

J.N. McNeil,
President

Plusieurs scientifiques déplorent la conjoncture actuelle de la science au Canada: généralement caractérisée par l'insuffisance des subventions et la surabondance des mentalités "quick fix, big bang for a buck" chez nos gestionnaires. Cette situation est aggravée par le fait que, malgré leur préoccupation sincère vis-à-vis la qualité de l'environnement et le changement global, la majorité des Canadiens ne considère pas la science et la technologie comme une partie intégrante de notre culture.

Plus tôt cette année les membres de la SEC ont voté en faveur de l'adhésion à une organisation parapluie, la Fédération Canadienne des Sociétés de Biologie. Subséquemment, lors de l'assemblée générale annuelle à St-Jean, les membres ont approuvé la proposition de l'Exécutif à savoir que pour les trois prochaines années, si la demande de la SEC est approuvée par la FCSB, la quote-part des membres canadiens et des membres étudiants (nous n'avons pas à payer pour nos membres qui résident à l'étranger) sera défrayée à même le budget opérationel de la SEC plutôt que par l'entremise d'une hausse des frais d'association. Les cotisations à la FCSB sont considérablement plus élevées que celles de la CBC, l'organisation parapluie à laquelle la SEC était auparavant affiliée, mais les bénéfices potentiels sont considérables puisque la FCSB s'avère une force efficace de lobbying à Ottawa, et est active au niveau de la sensibilisation du public. Cependant, le succès d'un tel organisme dépend de l'implication de ses sociétés membres. La SEC doit, en concertation avec les autres sociétés membres, jouer un rôle actif au sein de la FCSB. Dans l'intérêt de tout effort scientifique au pays il est essentiel que (i) le rôle et l'importance des scientifiques soient clairement portés à l'attention du public, et (ii) les efforts de lobbying au niveau politique soient efficaces et non pas synonyme de "Paying someone to pay for an MP's lunch..." (B.Frazer 1989. Bull. Ent. Soc. Can. 21: 36).

La SEC a démontré beaucoup d'initiative et de leadership par le passé, et elle se doit de continuer ainsi, en parallèlle avec ses activités au sein de la FCSB. La Commission Biologique du Canada (arthropodes terrestres), laquelle a ses origines dans la SEC, constitue présentement un modèle dans le but d'établir des commissions semblables en botanique et en parasitologie. Si les déclarations récentes d'Ottawa sur la place prépondérante de l'environnement s'avèrent plus que de la rhétorique, le travail de telles commissions sera essentiel. En effet, comment pouvons nous quantifier les changements fauniques causés par la pollution et le réchauffement global, ou sélectionner des bio-indicateurs adéquats si nous n'avons aucune idée de la composition des communautés originales ? De telles vérités semblent échappées à plusieurs, particulièrement aux décideurs. C'est à nous de travailler pour le changement mais pour cela tous les scientifiques concernés doivent être désireux d'agir. Je vous exhorte donc, dans les années à venir, à vous engager dans les activités de la SEC et de la FCSB.

J.N. McNeil,
Président

Réunion 1990 ESC/ESA Meeting

7 - 9 October/octobre 1990
Banff, Alberta

The organizing committee of the 1990 joint meeting of the Entomological Society of Canada and the Entomological Society of Alberta announces that there will be a plenary symposium on "Systematics and Entomology: Diversity, Distribution, Adaptation and Application". The theme of the symposium will be how systematics provides support to entomology, but this theme will be presented as analyses

of examples based on current research and drawn from the four allied arenas of knowledge cited in the title. The participants will offer data-rich presentations which will conclude with suggestions for future research to indicate where systematics-supported studies can lead in development of entomological knowledge.

Le comité organisateur de la réunion conjointe de la Société d'entomologie du Canada et de la Société d'entomologie de l'Alberta annonce qu'il aura une session plénière intitulée "Systematics and Entomology: Diversity, Distribution, Adaptation and Application". Le thème du symposium se concentrera sur les différents moyens par lesquels la systematique fournit de l'assistance a l'entomologie. Ce thème sera présenté comme une analyse d'exemples basées sur des recherches courantes, et tirera profit des quatres aires de savoir mentionées dans le titre. Les participants offriront des présentations riches en données, et concluront en suggérant de futures recherches, et en indiquant les diverses voies pas lesquelles les études supportées par la systèmatique peuvent promouvoir le développement du savoir entomologique.

Participants and their topics are / Les particpants et leurs matières sont:

Introduction (G.E. Ball)
The diversity of soil fauna: systematic and ecological problems (V.M. Behan-Pelletier)
Patterns in the diversity of Canadian faunas (H.V. Danks)
Distribution of western Hemiptera (G.G.E. Scudder)
Distribution and speciation in western swallowtails (F.A.H. Sperling)
Systematics, distribution and adaptations for parasitism in water-mites (I.M. Smith)
Systematics and adaptations in gall makers (J.D. Shorthouse)
Morphology, systematics and adaptation (G.A.P. Gibson)
Cutworms: confusions and adaptations (J.D. Lafontaine)
Molecular techniques and aphid systematics (R. Foottit)
Systematics and host plants in weevils (R.S. Anderson)
Synthesis: major themes from the symposium (G.E. Ball and H.V. Danks)

Annual Reports of Executive, Trustees and Committee Chairs

President

A great deal has happened during my term of office, partly because it was longer than usual and partly because of a number of major changes and activities.

Don Bright, our Treasurer, has been very busy. The main reason has been the implementing of the financial restructuring proposed by the Finance Committee and approved by the AGM last year. Another reason has been the attempt to acquire a building for our head office. We purchased a small house near our present office on the assurance that it would be appropriately rezoned. When it became obvious that rezoning was not going to happen, we had to sell and start all over again. I speak for everybody when I thank Don Bright for the efficient and businesslike way he has managed these affairs, while overseeing the operation of our Ottawa office.

With this meeting, Ed Becker will retire from the Executive Council and, soon after, Joe

Shemanchuk will retire as Secretary. Both are dedicated members and at least one of them has already found another way to serve the Society. The ceremonial part of their retirement comes later in this meeting.

Dr. Rick West, Forestry Canada, St. John's, will be the new Secretary. He will take office 1 January 1990 to allow Joe time to complete work generated by this meeting. I hope he will find this challenging, key position to his liking. The Secretary is the cement that keeps the Society together.

Bearing in mind that people are quick to complain and slow to offer compliments, *The Canadian Entomologist* and *Memoirs* are doing very well indeed; I've heard no complaints and several compliments. Scientific Editor Al Ewen, his Assistant Editors Harvey Craig and Bob Elliott and the unsung Associate Editors are to be commended.

The Governing Board, on the recommendation of the Publications Committee, decided that *The Canadian Entomologist* will be published bimonthly, beginning with volume 122 in 1990, to effect substantial savings in printing costs, some in the Managing Editor's workload and possibly mailing costs. This could cause short delays in publication of some papers but this is not considered serious; most competing journals are bimonthly or less frequent.

The *Bulletin* gets better and better, with a new cover design, more content and savings through desktop publishing. Ron Aiken has put a lot of effort into these changes and I thank him, his Assistant Editor and Editorial Assistant and the many contributors on your behalf.

Relations with our affiliates are healthy. I was able to attend annual meetings of the Acadian, Quebec and Ontario societies and was represented at the others. At each, my principal concern, declining support for science, entomology in particular, was emphasized. The Directors from affiliates play an indispensible role in communicating matters of mutual interest and importance.

We will continue as members of the BCC until it is disbanded 1 June 1990. The membership voted to join the Canadian Federation of Biological Societies by a vote of 188 to 109. The other 500 or so members did not vote. We have the option to join on behalf of all active members or on behalf of a class of members. You will be asked to consider these options at this meeting.

The book, *Butterflies of Manitoba,* which we chose not to support financially, has been published. It is a very well written and formatted book that covers a great deal larger area than that within the geographical limits of Manitoba. It can be obtained from the Manitoba Museum of Man and Nature.

Unless you attended the Workshop on the Diseases and Insects of Vegetables at this meeting, which unfortunately had to run concurrently with two other sessions, you may be unaware of the tremendous task that has been undertaken. This joint book publishing project with the Canadian Phytopathological Society has involved many of our members in researching, writing and translating the many sections. John Garland has been coordinating all of this activity, harmonizing the collation and timing of our parts with those of the CPS, writing some sections himself and, with Dr. Ron Howard of the CPS, dealing with all the details of publishing the book. I have come to appreciate the amount of dedication, altruism and just plain hard work this entails for John and his committee.

The Society's invited brief to the House of Commons' Select Committee on Forestry and Environment became "part of the record". The last word from this committee in January was that it would be reconstituted following the November 1988 election. We were provided with a translation and they were to set a date for an oral presentation, which I now assume won't happen. In the meantime, the text of my talk to the Eastern Spruce Budworm Research Work Conference (*Bull.* 21(2):45 - 48) was sent to the committee by the Hon. Member for Fredericton, translated and became part of the record as well.

Syd Cannings and Jim Troubridge, members of the Ad Hoc Committee on Endangered Species of Insects, wrote the Chairman of the Vancouver Board of Parks and Recreation, on behalf of Tony Thomas, Chairman of the committee and your President to protest actions that would extirpate a small population of hairstreak butterfly, *Callophrys johnsoni,* in Stanley Park. This is probably the rarest species of North American butterfly and is known in Canada from only two localities in B.C. They sent

copies to the Mayor of Vancouver, the B.C. Minister of the Environment and the *Vancouver Sun.*

On the recommendation of the Ad Hoc Committee on Endangered Species of Insects, a continuing committee will be established by the Governing Board.

On your behalf, I thank the many committees, of which there are 23 - 3 standing (required under our bylaws), 15 continuing and 4 ad hoc. We also have two members on a joint committee with the Canadian Phytopathological Society. All committees have been active to various degrees and evidence of their activities has appeared in the *Bulletin* and in such things as awards, honours, scholarships, grants, ballots and activities at this meeting such as the workshop of the committee on the joint ESC/CPS publication on diseases and insects of vegetables, the Biological Survey sponsored a symposium on springs and the organization of the meeting itself.

I thank you, the members of this Society, for supporting the good works in publishing, science policy initiatives, special projects and studies, awards, scholarships and grants.

Finally, I thank you for your confidence in entrusting me with the guidance of our Society for the past 18 months. I hope I have fulfilled your expectations.

D.C. Eidt, President

Président

Il s'est passé beaucoup de choses durant mon terme d'office, non seulement parce qu'il a duré plus longtemps que prévu, mais aussi parce qu'il ya eu plusieurs activités et changements importants.

Don Bright, notre trésorier, a été des plus occupé. Ce fut surtout à cause de la restructuration financière proposée par le comité de finance, telle qu'approuvée lors de la réunion générale annuelle de l'an passé. Une autre raison fut notre tentative d'acquérir un local pour notre siège social. Nous avons été obligé une petite maison tout près de notre bureau actuel avec l'assurance qu'elle satisferait aux exigences de zonage. Lorsqu'il a fallu admettre qu'on ne pourrait satifaire à ces exigences, nous avon été obligés de vendre et recommencer à nouveau les transactions. Je parle au nom de tous quand je remercie Don Bright pour l'aptitude qu'il a montré dans la conduite de ces affaires, tout en dirigeant les activités du bureau à Ottawa.

Cette réunion sera la dernière d'Ed Becker qui se retirer du Conseil Exécutif et marquera aussi le depart de notre secrétaire, Joe Shemanchuk. Au moins un des deux a déjà trouvé un autre moyen de continuer à servir la Société. Je me fais votre porte-parole en les remerciant tous deux pour leur dévouement au travail.

Rick West, Forêts Canada, St. Jean, Terre Neuve, sera notre nouveau secrétaire. Il entrera en fonction le 1er janvier 1990, pour permettre à Joe de compléter le travail occasionné par cette réunion. J'espère que cette position toujours pleine de défi saura lui plaire. Il faut reconnaître que le secrétaire représente le ciment qui lie notre Société.

Sachant ques les personnes sont promptes à porter plainte et lentes à offrir leurs compliments, *The Canadian Entomologist* et *Memoirs* semblent bien se tirer d'affaire à ce point de vue, puisque je n'ai entendu aucune plainte mais reçu plusieurs compliments. Félicitations à notre éditeur scientifique, Al Ewen, à ses éditeurs adjoints, Harvey Craig et Bob Elliott, ainsi q'aux éditeurs associés.

Le Conseil d'Administration, suite à la recommandation du Comité de Publication, a décidé que*The Canadian Entomologist* sera publié tous les deux mois, à partir du volume 122 en 1990, afin de permettre de réaliser des économies majeures dans les coûts d'impression, dans le bureau de rédaction et possiblement aussi dans les coûts d'expédition. Il pourrait en résulter certains délais dans la publications de quelques articles, mais nous n'anticipons aucune difficulté sérieuse à cet égard. La plupart des journaux scientifiques sont également publiés bimensuellement ou même moins

fréquemment.

Le *Bulletin* continue de s'améliorer grâce à sa nouvelle couverture, un contenu accru, et des économies du côté de la publication informatisée. Ron Aiken a fourni beaucoup d'effort à réaliser tous ces changements, et je le remercie en votre nom. Un sincère merci également à son éditeur adjoint, à son assistant à la rédaction, ainsi qu'à toutes les personnes ayant contribué au *Bulletin*.

Les relations avec les sociétés affiliées sont très bonnes. J'ai pu assister aux réunion annuelles des Sociétés de la Région Atlantique (Acadian), du Québec et de l'Ontario et je me suis fait remplacer aux autres. Le malaise prédominant exprimé à chacune de celles-ci était la baisse de support accordée à la recherche scientifique, surtout dans le domaine d'entomologie. Les directeurs des sociétés affiliées ont joué un rôle indispensable en nous communiquant leurs préoccupations d'intérêt et d'importance mutuelles.

Nous allons maintenir notre affiliation au CBC jusqu'à son abolition, prévue pour le 1er juin 1990. Nos membres ont majoritairement voté (188 a 109) de se joindre à la Fédération Canadienne des Sociétés Biologiques. Les autres 400 membres et plus n'ont pas voté. La SEC se joindra à la FCSB, sujet à son approbation, le 1er septembre 1990, sans augmentation des cotisations avant le 1er janvier 1994. La cotisation de $35 perçue par la FCSB sera absorbée dans la buget de la Société. Ceci nous permettera de déterminer nos objectifs à l'intérieur de la FCSB, ce que nous pouvons offrir à la FCSB, et comment en retour la FCSB peut bénéficier aux entomologistes. Avant la fin des trois années, la SEC évaluera sa position et décidera des démarches à entreprendre.

Le manuel, *Butterflies of Manitoba*, qui n'a pas reçu notre appui financier, a été publié. C'est un ouvrage très bien écrit et présenté, qui couvre un territoire beacoup plus vaste que les limites géographiques du Manitoba. Des copies sont disponibles au Museum of Man and Nature.

A moins d'avoir participé à l'atelier sur les maladies et insectes des légumes à St. Jean, Terre Neuve, qu'il a fallu malheureusement tenir concurrement avec deux autres sessions, vous ignorez probablement l'ampleur de la tâche entreprise. Ce projet conjoint de publication d'un manuel avec la Société Canadienne de Phytopathologie a impliqué plusieurs de nos membres dans la recherche, la rédaction et la traduction de plusieurs sections. John Garland a coordonné toutes ces activités, harmonisant la collation et la distribution de nos textes avec ceux de la SCP, en ecrivant certaines sections lui-même et, avec le Dr. Ron Howard de la SCP, en s'occupant de tous les détails concernant la publication du manuel. J'apprécie de plus en plus tout le dévouement , la générosité et l'énorme travail que ceci exige de John et son Comité.

Le mémoire de la Société, qu'avait sollicité le Comité Spécial de la Chambre des Communes sur la Foresterie et l'Environnement, fait maintenant partie du "dossier officiel". Le Comité promettait dans sa dernière déclaration, en janvier, de se reconstituer après les élections de novembre 1988. On nous avait fourni une traduction, et le Comité devait fixer une date pour notre présentation orale. J'imagine maintenant qu'elle n'aura pas lieu. Entre-temps le texte de ma conférence à la Eastern Spruce Budworm Research Work Conference (*Bull.* 21(2):45 - 48) qui a été envoyé au Comité par l'honorable député de Fredericton, a été traduit et fait également partie maintenant du "dossier officiel".

Syd Cannings et Jim Troubridge, membres du comité ad hoc sur les espèces d'insectes menacées , ont écrit au président du Vancouver Board of Parks and Recreation, au nom de Tony Thomas, président du comité, et de votre président, afin de protester contre certaines initiatives qui extermineraient une petite population du papillon, *Callophrys johnsoni*, à l'intérieur de Stanley Park. On considère cette espèce comme étant probablement la plus rare parmi les espèces de papillons nord-américains. Elle n'a été répérée au Canada qu'à deux endroits en C.-B. Syd et Jim ont envoyé des copies de leur lettre au maire de Vancouver, au Ministre de l'Environnement de la C.-B. et au *Vancouver Sun*.

Suite aux recommendations du comité ad hoc sur les espèces d'insectes menacées, un comité spécial sera etabli par le présent Conseil d'Administration.

Le 1er mai 1989 marquait le fin des activités pour le Canada Biting Fly Centre. Une lettre signifiant

nos appréhensions à cet effet sera redigée sous peu. Aucune action n'est prévue pour l'immédiat, toutefois, cette situation étant symptômatique du problème beaucoup plus vaste du périclitement de la science au Canada.

Le Conseil d'Administration a voté d'accepter une invitation de tenir sa réunion conjointment avec celle de la Entomological Society of Saskatchewan en 1992. Tel qu'indiqué ailleurs dans le *Bulletin* , la Entomological Society of Alberta sera l'hôte de la réunion de 1990 à Banff, tandis que celle de 1991 sera sous l'égide de la Société d'entomologie du Québec à Montréal.

A l'invitation de la Entomological Society of America, qui célèbre cette année son centenaire, nous serons représentés par notre nouveau président Dr. Jeremy McNeil. Lors des cérémonies, Dr. McNeil sera assis à la table d'honneur avec les présidents des autres sociétés. Il présentera à la ESA un maillet d'autorité, fabriqué de bois canadien et étalant une inscription appropriée, en témoignage de nos meilleurs voeux.

En votre nom, je remercie chacun des 23 comités. Notons également la présence de deux de nos membres sur une comité conjoint avec la Société canadienne de Phytopathologie. Tous les comités ont été actif, nous en avons l'évidence dans le *Bulletin* ainsi qu'avec les prix, certificats d'honneur, bourses, octrois et autres activités à cette réunion, telles que l'atelier du comité sur la publication conjointe SEC/ SCP sur les maladies et insectes des légumes, le symposium sur les sources que parrainait le Relevé biologique du Canada et l'organisation même de la réunion.

Je vous remercie, embres de cette Société, pour avoir supporté ces magnifiques efforts de publication, ces tentatives d'élaborer de bonnes politiques scientifiques, ces études et projets spéciaux, prix, bourses et octrois.

En terminant je vous remercie de la confiance que vous m'avez témoignée en me confiant la direction de votre Société pendant les 15 derniers mois. J'espère avoir recontre vos attentes.

D.C. Eidt, Président

Secretary

During the past year, I have recorded minutes of the meetings of the Annual General Meeting, the Governing Board and the Executive Council, prepared the agenda for these meetings and sent out notices of these meetings to the Executive, Directors, Committee Chairs and Trustees. Notices of meetings, awards and some activities were submitted to the *Bulletin* for publication. I have maintained files and distributed minutes, reports, scholarship notices and applications and other information as requested. I provided liaison between committees of the Society and the Governing Board and between the Society and Affiliate Societies. Much time was spent on Society business and involved taking care of correspondence and day-to-day affairs of the Society.

I initiated an update of the By-Laws, Rules and Guidelines in preparation for translation into French and for entry to computer disc for permanent record. Availibility of computer service made the task of the Secretary much easier.

J.A. Shemanchuk, Secretary

Finance Committee

The Finance Committee met on 21 September 1989 to consider a number of items, resulting in the following recommendations.

1. *Translation of Abstracts for Papers in* The Canadian Entomologist - The Managing Editor has noted that the Society lacks a formal, efficient mechanism for securing translations of abstracts in a timely manner. The Society currently depends upon volunteers for translation of abstracts of papers submitted by authors who are not government employees and cannot impose firm deadlines under these circumstances. We recommend that the Society require that authors who have access to in-house translation services submit abstracts in both English and French and that the Society formally contract out translation of abstracts from other authors and recover costs.
2. *Costs of Publishing Collected Works and Symposia as* Memoirs - The Managing Editor has noted that the Society lacks a mechanism for recovering costs of extra pages (i.e. title page, contents pages, etc.) and additional overhead associated with publishing symposium proceedings and similar collected works as *Memoirs*. The Society currently absorbs these costs. We recommend that the Society adopt the policy of recovering these costs by applying a surcharge to be borne equally by all authors.
3. *Spousal Membership Category* - The Executive has requested a recommendation on a husband-wife member ship category. We recommend that the Society establish a new membership category for spouses of regular members and that annual dues for spousal members be set at $20 per annum. Spousal members should be entitled to all privileges of regular members but would not subscribe to publications (*Bulletin, Can. Ent., Memoirs*).
4. *Classification Level of Clerical Position in Carling Avenue Office* - The committee has noted that classification level and salary of this position have not been reviewed for some time. We recommend that the Executive name a task force to review the duties of this position during 1990 to ensure that the classification level and salary are appropriate.
5. *Honoraria Paid to Trustees of the Society* - The committee has noted that the unaccountable expenses of the Trustees have not been revised for some time. We recommend that the Society increase these expenses by 25% to account for inflation since the last adjustments were made.
6. *Cost of the Annual Meeting* - The committee has noted that the cost of the Annual Meeting is anexcessive burden on the Society's resources. We propose that the Finance Committee study this problem during 1990 with the aim of considering various options for reducing these costs and providing a comprehensive set of recommendations at the next Annual Meeting.
7. *Mechanisms for Increasing the Income of the Society* - The committee has noted that a number of possible means of increasing income are not being pursued actively. We recommend that the Society promote sustaining membership more actively and implement mechanisms to encourage appropriate advertising in the *Bulletin*.

I. Smith, Chair

Publications Committee

Members of the Publications Committee are: V.M. Behan-Pelletier, C. Cloutier, H.V. Danks, L. LeSage, R.A. Ring, J.F. Sutcliffe. The Scientific Editor, Bulletin Editor and President are *ex officio* members.

During 1988-89, the Commitee considered 8 applications for page-charge waiver, dealt with 31

books sent for review and assisted the President and the Editor in response to their various requests and enquiries. Decisions of the Publications Committee on certain policy matters, and other actions, were as follows:

1) The Publications Committee recommended that *The Canadian Entomologist* be published every 2 months rather than monthly. Such a schedule provides more flexibility in case of unexpected events (e.g. illness, press breakdowns) and also would be anticipated to save a useful amount in printing costs, because fewer issues would be printed and mailed even though the same number of pages would be produced.

2) The Publications Committee recommended that information about how decisions on page-charge waivers are reached be made available to authors with the waiver application form. A summary was prepared for this purpose, including a version of the summary and of the application in the French language. These items were made available to the Society.

3) The Publications Committee recommended that *Memoirs* be treated separately from *The Canadian Entomologist* for page-charge waivers, but similarly, so that up to 50 pages or 4% of the pages in a given year (whichever is lesser) are eligible for subsidy in each journal.

4) The Publications Committee recommended that the ESC proceed with copyright registration for *The Canadian Entomologist* and *Memoirs*, an action that would be intended to enhance the visibility and acknowledgement of the journals rather than for legal recourse.

5) A leaflet advertising ESC publications was produced for distribution at the International Congress of Entomology and for other purposes.

H.V. Danks, Chair

Scientific Editor

Editorial Office - From 1 June 1988 through 31 August 1989, services and supplies for the editorial office in Saskatoon have amounted to ca. $9150 (ca. $610 per month), compared with ca. $480 per month for 1987 - 88 and ca. $637 per month for 1986 - 87. The major expenditures have been for word processing (ca. $5715), telephone (ca. $1308) and postage (ca. $1240).

Dr. M.K. Mukerji retired in February of 1989 and was replaced as Assistant Editor by R.H. Elliott, of the Saskatoon Research Station. Dr. A.A. Berryman (Washington State University) resigned as Associate Editor and has been replaced by Dr. J. Régnière (Forestry Canada, Sainte-Foy, Quebec) as Associate Editor responsible for manuscripts dealing with population modelling and dynamics. Dr. Ron Aiken (Mount Allison University, Sackville, New Brunswick) was kind enought to act as Associate Editor for manuscripts on insect behaviour, filling in for Dr. B. Roitberg who took a year's sabbatical.

Two manuscripts have been accepted for publication under sponsorship of the C.P. Alexander Fund. Four scientists (for three manuscripts) have accepted invitations to prepare submissions; two more manuscripts are being negotiated. Suggestions of possible invitees are welcome at any time and from any member of the Society.

Manuscripts - From 1 June 1988 to 29 August 1989, 200 manuscripts (including 5 *Memoirs*) were received. Their disposition was:

In review	30
In revision(A)	30
Withdrawn(B)	4
Accepted(C)	88
Rejected (D)	48
Total	200

$$\text{Rejection Rate} = \frac{(D + B)}{(A+B+C+D)} = 30.6\%$$

Time in review for the 170 that have been through the review process:

Weeks in Initial Review*	0-2	3-4	5-6	7-8	9-10	11-12	13 or more
Number of Manuscripts	3	12	29	37	30	31	28

*Time from receipt of submission to return to authors.

Memoirs - Six *Memoirs* (nos. 141 -146), 921 pages, were published in 1988. Five *Memoirs* were submitted during 1988: all have been accepted for publication in 1989 and the galley proofs have been set for four. One *Memoir* was submitted in 1989 and at least three more are in the planning stage - one from the 1989 St. John's meeting and two from the 1990 Banff meeting.

Size of the Society's Publication - The total number of pages published by the Society during the last five years is:

Year	The Canadian Entomologist	Memoirs	Total Pages
1984	1696	647	2343
1985	1592	914	2506
1986	1311	890	2201
1987	1160	897	2057
1988	1161	921	2082

The number of manuscripts submitted for publication has changed very little since the page charges were lowered in July 1988, compared with previous years. As of 29 August, 110 manuscripts had been submitted in 1987, 108 in 1988 and 127 in 1989.

The Future - Following recommendations from the Publications Committee, I propose to make one addition and one change to the "Instructions to Authors":

1) Add to the "General" paragraph: "Authors are urged to deposit voucher specimens, documenting the identity of the organisms studied, in recognized institutions and to note these repositories in their papers."

2) In "References" paragraph: Change "Authors should ensure that they have permission to quote 'personal communications' to read: "Letters of permission to use data must be provided for any 'personal communication' cited by authors."

The problem of obtaining French translations of Abstracts continues and is worsening. Very few translations are provided by authors, even authors from federal establishments. Dr. Conrad Cloutier has given the Society yeoman service for the past several years in providing translations for almost all published manuscripts, but he needs help now and would prefer to be relieved of this job in the near future. May I please recommend to the Governing Board that the 1989-1990 Publications Committee be asked to thoroughly investigate the problem of Abstract translations and to recommend solutions at the earliest possible opportunity.

My sincere thanks go to my Assistant and Associate Editors and to the many anonymous reviewers, all of whom willingly give of their time and expertise. Most are prompt, courteous and thorough and they provide the Society with a service that could never be bought. Barbara Patterson continues to function as an efficient, patient and friendly Managing Editor and she has my thanks for that. And, last, my thanks to the Publications Committee for their help and advice. Thank you for the privilege of serving as Scientific Editor. I, and the Assistant Editors, are willing to continue but you have our offer to resign if you wish to appoint other people.

Al B. Ewen, Scientific Editor

Bulletin Editor

The past year has seen major changes in the production and design of the *Bulletin* of the Entomological Society of Canada. I am now producing the *Bulletin* on a Macintosh Plus computer using either MacWrite or Microsoft Word for word processing and Pagemaker for desktop publishing. There was no cost to the Society for this software - saving over $1,000. These changes have had several effects:
1) Production costs are much lower since the copy is now camera ready and not typeset.
2) Formatting and cosmetic changes are much easier and can be done by the editor - eliminating any misunderstandings in communication between the editor and printer.
3) Members can (and are encouraged to) submit material on floppy disk. This saves typing time.
4) There is more time involved for the editor in compiling and typing the *Bulletin* but as yet this is not an onerous task.
5) The deadlines (beginning in December, 1989) have been reduced from six to four weeks before the month of issue. This will necessitate very strict adherence to these guidelines.

The cover, typeface and organization of *Bulletin* have been changed as follows:
1) The typeface has been changed from Helvetica to Times. The Times typeface was thought to be more "professional" looking and easier to read.
2) I have set up a number of fixed categories ("departments") into which information for the *Bulletin* can be placed. These categories are listed in every table of contents on the last page and, if no submissions have come in for a particular category, then no page number appears next to that category.
3) With the approval of the Publications Committee, I and Ms. Raananna Thiébaux re-designed the cover of the *Bulletin* . Ms.Thiébaux has produced a series of four line drawings - one for each issue. This series of drawings will be repeated in the corresponding issues in subsequent years (i.e. the March issue will always feature the drawing of *Ranatra*).

In addition, I have begun a series of editorials on topics that I thought may be of interest to members. These editorials have generated some comment in the form of Letters to the Editor. Members are encouraged to submit editorials to the *Bulletin* .

These changes have, based on the mail I have received, been welcomed by the members of the Society. On behalf of Ms. Thiébaux and me, I would like to thank all those who have commented or written to me about the changes for their kind comments.

R. Aiken, Bulletin Editor

Scientific Policy Committee

The committee met on 25 April 1989 in Ottawa, immediately following the mid-term meeting of the Executive Council. The first order of business was to examine the dossier of neglected areas of entomological research. At present there are several ongoing studies:

1) *The return on investments in entomological research* - This project is being carried out under the direction of Dr. F. McEwen at Guelph. A graduate student in the Department of Agricultural Economics and Business has chosen this subject as her thesis project. The information obtained in the preparation of her thesis outline will serve as a base for the committee.
2) *The diseases and insects of vegetables in Canada* - This is a joint project with the Canadian Phytopathological Society. The Chair of the entomological committee, Dr. J.A. Garland, presented a

progress report. This project is advancing well and the committee will meet during the Annual Meeting at St. John's.

3) *Committee on pesticide policy* - This committee was given the mandate of updating the 1970 ESC document on pesticides. Following discussion it was decided to modify the mandate to prepare a document of broader scope, addressing pest management and the position of the ESC on the rational control of insect pests. As a consequence, the committee has been renamed the Pest Management Policy Committee.

4) *Insect transmission of plant diseases* - This new committee was approved and Dr. G. Boiteau has accepted the chair. The mandate will be to examine the major problems faced by Canadian farmers, attempt to place priority judgements on the crops affected and recommend areas where major research efforts are necessary.

Dr. R. Jaques wrote suggesting that there is a need for the ESC to prepare a brief on biological control. The Science Policy Committee felt that there was a need for more defined goals and discussions are presently underway to examine what directions should be taken.

Dr. I. Smith presented a brief outline of the special workshop that was held recently to discuss the future of systematics in Canada and the proposed recommendations that came from this workshop. A report is to be presented to the Governing Board for consideration at the Annual Meeting in St. John's.

The Science Policy Committee strongly believes that the ESC must play a major role in assuring the future of science in Canada. The exact approach will depend very much on whether or not the ESC joins the Canadian Federation of Biological Societies and a long term plan will be developed once this matter has been finalized in the near future.

J.N. McNeil, Chair

By-Laws, Rules and Regulations Committee

The By-Laws, Rules and Regulations Committee was asked by the Governing Board to look at three items from its meeting on 2 - 3 July 1988.

1) *Bilingualism Committee* (item 8.2 of meeting of 2 - 3 July 1988)

The By-Laws, Rules and Regulations Committee was instructed to develop Standing Rules and Committee Guidelines for this committee. These documents were produced. The Executive Council approved them in principle in April. The Governing Board approved them in October and the Secretary has now incorporated them into the Society's documents.

2) *Student Paper Competition* (see 8.7.2 of meeting of 2 - 3 July 1988)

The By-Laws, Rules and Regulations Committee was instructed to add the Guidelines for the Student Paper Competition to the Committee Guidelines for the Annual General Meeting Committee. The guidelines were drafted and added to the Committee Guidelines of the Annual General Meeting Committee.

3) *Graduate Research-Travel Grants Committee* (see 8.11 of meeting of 2 - 3 July 1988)

The By-Laws, Rules and Regulations Committee was instructed to develop Standing Rules and Committee Guidelines for this committee. These documents were produced. The Governing Board approved them in October and the Secretary has now incorporated them into the Society's documents.

George H. Gerber, Chair

Membership Committee

The Membership Committee received and considered only one nomination for Honorary Member: Prof. Thelma Findlayson, Simon Fraser University. The committee was unanimous in recommending her nomination to the Society.

A membership campaign will be launched after the President advises the committee of the results from the C.F.B.S. referendum.

The committee still awaits a list of lapsed memberships from Ottawa. Upon receipt, letters of concern will be mailed to said individuals.

Letters have been sent to department chairpersons throughout the country asking them to identify new students working in the area of entomology.

B. Roitberg, Chair

Fellowship Committee

One of the duties of the Fellowship Committee is to ensure that the number of Fellows, excluding 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 this percentage may be exceeded temporarily.

At the time of the 1988 Annual Meeting, we had exceeded by 7 the ten percent quota. Consequently, I did not ask the Bulletin Editor to publish a notice in the December 1988 *Bulletin* soliciting nominees as candidates for Fellowship in 1989.

As of 1 September 1989, our active membership, including both regular and student, was 638 (550 regular, 88 students). In addition, we have 78 emeritus members. Our list of Fellows currently stands at 87, including 12 who hold honorary or emeritus status. If we subtract these 12, we have 75 Fellows who are active members. The extra 11 Fellows are still permissable according to Committee Guidelines, as this situation developed due to a decrease in the number of active members. With a continued restriction on the soliciting of nominees as candidates for Fellowship and, hopefully an increase in active membership, the situation should eventually rectify itself. Unfortunately, our active membership has declined by 42 during the period 31 December - 1 September 1989.

Ray F. Morris, Chair

Elections Committee

The committee was comprised of Drs. J.R. Byers, K.W. Richards and D. L. Struble. The committee met on 28 July 1989 at the Agriculture Canada Research Station, Lethbridge, Alberta and examined ballots for the 1989 election of officers. A total of 298 ballots were received. The successful candidates were:

Second Vice-President	Dr. R. Ring
Directors-at-Large	Dr. L.A. Gilkeson
	Dr. D. Quiring
Fellowship Selection Committtee	Dr. A.R. Forbes
	Dr. V.R. Vickery

Honorary Member	Prof. T. Findlayson	
Referendum on C.F.B.S.	Yes	188
	No	109

D. L. Struble, Chair

Scholarship Committee

There were five applications for the ESC scholarships. These were evaluated by seven members of the committee and the President. The winners were Gregory Ray Pohl (Department of Entomology, University of Alberta) and Heather Jane Dewar (Department of Environmental Biology, University of Guelph). A fifth candidate was disqualified as not meeting the eligibility criterion of first year in a postgraduate program. The eligibility of the winners as enrolled students has been confirmed. The unsuccessful candidates have been informed in writing. Copies of the correspondence have been sent to J.A. Shemanchuk, ESC Secretary.

Notice of the 1989-1990 Award was published in the December issue of the *Bulletin* and also sent in January 1989 to student award offices of major universities across Canada and department chairmen where entomology is taught. In order to encourage greater response, a more dramatic poster copy has been prepared for university distribution using desktop publishing facilities. This will be sent out in December to coincide with the 1989-1990 *Bulletin* announcement.

The PC data base for the Scholarship Committee is kept on an updated diskette. The revised application form, which deleted information considered inappropriate to the application, appeared to work well.

J.E. Hollebone, Chair

Heritage Committee

The archival holdings of the Society, within the Public Archives of Canada, received a few contributions during the year. Included were:

1) Thirty items arising from the XVIII International Congress of Entomology in Vancouver (brochures, posters, booklets, logo, proceedings, etc.),
2) Ninety photographs: most taken at Annual Meetings,
3) Brochures of Gold Medal and C.G. Hewitt Award winners,
4) Seven Annual Meeting programs: 1953 - 1987,
5) Several other miscellaneous items (abstracts, programs, dinner menus, descriptive literature, etc.),
6) Video cassette - Research Station, St. Jean, Que.

Two books, *Entomologists of Manitoba* and *Entomologists of Alberta* were published in midsummer. These were the compilations of profiles of western Canadian entomologists: further work is progressing well. The profiles of British Columbia and Saskatchewan entomologists should be completed and published in 1990.

P.W. Riegert, Chair

Insect Common Names and Cultures Committee

Members of the ICNCC during 1988 - 89 were: E.M. Belton (Chair), J.S. Kelleher, L. LeSage, K. Moore, A.G. Robinson, P.D. Syme and L.S. Thompson.

Six new English names, one additional name and one deletion were proposed this summer and have been sent to ICNCC members. Replies so far received have been in favour of the above. When I hear from the rest of the committee, the adopted names will be published in the *Bulletin* for ratification by other ESC members.

Through the efforts of Drs. J.N. McNeil and L. LeSage, the ESC and the SPVQ have reached an agreement about insect names. The master lists will be maintained at the Centre forestière des Laurentides where M. Lagüe will be in charge of updating them. Copies of the English names will be sent to the ICNCC (E.M. Belton), the French names to the Common Names Committee of the SPVQ and the scientific names to the BRC (L. LeSage). When I receive the English list, I will add order and family for each entry so that the names can be sorted into taxonomic groups and sent to interested experts.

Dr. Stoetzel will send me a copy of the revised ESA Insect Common Names List as soon as it is available. I will then compare any changes of English and scientific names with our lists. In the ESA *Newsletter* (12:6), she states that papers submitted to ESA journals and the *Bulletin* are required to use approved common names where available. I don't think the ESC needs to bring in a similar regulation but would be interested in the opinion of the Board of Governors.

E.M. Belton, Chair

Comité du bilinguisme

Lors de la dernière réunion du conseil d'administration de la SEC (Vancouver, juillet 1988) nous avons reçu le mandat d'identifier les démarches nécessaires pour que la S.E.C. devienne bilingue. Au cours de l'année, le comité a vu à la mise en application des suggestions contenues dans le Rapport du comité consultatif sur la langue (*Bull. SEC* 19(2), 1987).

Certains textes associés à des activités importantes de la SEC, par exemple les résumés dans le Canadian Entomologist et les directives aux auteurs, sont déjà publiés dans les deux langues officielles. Il semble y avoir un besoin urgent d'aide à la traduction des résumés. Ce travail repose sur les épaules d'un seul bénévole depuis longtemps, Conrad Cloutier.

A la demande de l'Editeur du *Bulletin*, Ron Aiken, nous avons traduit certaines parties du Bulletin. Des changements récents dans la photocomposition du Bulletin (re. utilisation d'un micro-ordinateur MacIntosh) rendront l'échange d'information plus facile et précise.

Nous proposons ce qui suit:

1) Tel que suggéré dans le Rapport du comité consultatif sur la langue, la traduction en français des documents officiels tels les règlements. A cet effet, une demande de fond a été acheminée au Gouvernement fédéral sous le programme "Appui à l'interprétation et/ou à la traduction du programme de collaboration avec les secteurs privés et bénévoles".

2) Tel que suggéré dans le Rapport du comité consultatif sur la langue, les comités suivants devraient publier leur textes dans les deux langues officielles: Comité des décorations, Comité des élections et Comité organisateur de la réunion annuelle (au minimum, texte d'invitation).

3) Le trésorier de la S.E.C. devrait inclure, dans sa demande de fonds adressée au Conseil de recherches en sciences naturelles et génie (CRSNG), une enveloppe pour défrayer les coûts de traduction des résumés du Canadian Entomologist. En plus des résumés, les titres devraient paraître dans les deux

langues.

4) Certains articles de fond du Bulletin qui ne sont pas traduits actuellement, notamment les éditoriaux qui véhiculent souvent des points de vue importants pour les membres de la S.E.C., devraient être traduits. Les revues de livres qui paraissent dans le Bulletin devraient paraître dans la langue de l'ouvrage.

5) Nous proposons la formation d'un groupe de 5 à 7 personnes bénévoles qui pourraient répondre aux besoins de la traduction des comités de la SEC.

6) Une personne bilingue devrait être associée à l'organisation de toutes les réunions annuelles. Dans la documentation des réunions annuelles, il devrait être clair que les présentations orales (ou affiche) peuvent se faire dans l'une ou l'autre des langues officielles. Pour les concours étudiants, les juges devront être bilingues. Les organisateurs devraient encourager la soumission des titres et résumés des présentations dans les deux langues.

7) Dans le but de repérer les membres capables et prêts d'aider à la traduction, nous suggérons qu'apparaisse, dans la liste des membres de la SEC, une mention à cet effet. Ceci pourrait être utile aux personnes en charge de Comités de la SEC qui désireraient trouver des compétences linguistiques dans leur entourage immédiat.

8) Qu'au fur et à mesure que la papeterie de la SEC est renouvelée, que l'on prenne soin de consulter le Comité du bilinguisme pour s'assurer que le contenu est bien traduit.

9) Que la SEC considère d'appliquer pour un plan de bilinguisme du Secrétariat d'Etat du Canada: ceci aurait pour conséquence que la Société devrait être fonctionnellement bilingue cinq ans après la mise en marche du plan. Elle aurait, en contrepartie, les ressources financières pour atteindre cet objectif. La documentation pertinente a été envoyée au premier vice-président (J. N. McNeil) et au second vice-président (J. E. Laing).

Nous demandons à tous ceux ou celles qui ont des commentaires de les adresser au Comité du bilinguisme de la SEC - Charles Vincent, Johanne Delisle ou Ken Pivnick.

Charles Vincent, Président

Committee on Bilingualism

At the last ESC Executive Council meeting (Vancouver, July 1988), we received the mandate to identify the steps necessary so that the ESC can become a bilingual society. During the year, the committee also reviewed the application by the ESC of suggestions contained in the report of the Language Advisory Committee (*Bull. ESC* 19(2), 1987).

Some written material relating to important ESC activities, such as the abstracts and the instructions to authors in *The Canadian Entomologist*, are already published in both official languages. But there is an immediate need for assistance in the translation of abstracts. For a number of years, this task has been the responsibility of a single volunteer, Conrad Cloutier.

At the request of the Bulletin Editor, Ron Aiken, we have translated some parts of the *Bulletin* into French. Some recent changes in the production of the *Bulletin* with the employment of a personal computer will make the exchange of information easier and more precise.

We propose the following measures:

1) As was previously suggested in the Language Advisory Committee Report, the ESC should translate official Society documents (the Constitution, Standing Rules and the Bylaws) into French. To help achieve this, we have submitted a grant application to the federal government under the program "Assistance for the interpretation and translation of the collaboration with the business and non-profit sectors program".

2) As was previously suggested in the Language Advisory Committee report, the following committees should publish their written material in English and French: Awards, Elections and Annual Meeting Organizing Committees. For the last named committee, at a minimum, the meeting announcements should be in both languages;

3) In his NSERC grant application, the ESC Treasurer should apply for special funds for bilingualism to be used to pay the costs of translation of abstracts of scientific papers in *The Canadian Entomologist.* The titles as well as the abstracts should appear in both languages;

4) Certain important elements of the *Bulletin* which are not presently translated, particularly the editorials, should be translated, as they frequently present opinions which are important for ESC members to read. Book reviews in the *Bulletin* should appear in the language of the book if being reviewed in English or French;

5) We propose the formation of a group of 5 to 7 ESC members who will respond to the translation needs of the ESC committees;

6) A bilingual member should be appointed to work with the organizing committee of each Annual Meeting. In the Annual Meeting announcements, it should be clear that oral and poster presentations can be made in either official language. For student competitions, the judges should therefore be bilingual. The call for papers should encourage members to submit their presentation titles and résumés in both English and French;

7) In the creation of the next member list, we suggest that the compilers determine which members are bilingual and willing to help out in translating, perhaps with a question on the membership renewal form. If willing bilingual members were identified in the membership list, it might be easier for unilingual members to find assistance in translating Society material;

8) As ESC stationery is renewed with bilingual letterheads, etc., the people responsible should take the trouble to consult the Committee on Bilingualism to ensure that the French translations are accurate;

9) The ESC should consider applying for the Bilingualism Programme of the Secretary of State of Canada, so that the Society could function as a bilingual society within five years, if the members so desire. The plan would allow us the financial resources necessary to attain this objective. The pertinent information has been sent to the first (J.N. McNeil) and second (J.E. Laing) vice-presidents.

We would ask that anyone with comments please contact members of this committee - Charles Vincent, Johanne Delisle or Ken Pivnick.

Charles Vincent (Président)

Research-Travel Grants Committee

A notice, in English and French, was published in the September 1988 *Bulletin*, inviting graduate students to apply for Research-Travel Grants.

Two applications were considered this first competition for Graduate Research-Travel Grants. One award of $2000 was made. After the selection had been made, each applicant received a summary of the Committee's positive and negative comments about their application.

The successful application was Ms. F. Hunter, Queen's University, who has been working on the ecology of cytospecies of black flies in Ontario and who sought funding to travel to the University of Alberta to be trained in morphometric techniques of blackfly taxomony.

A notice was prepared for publication in the September 1989 *Bulletin* to announce the next competition which will have a deadline date of 15 January 1990.

The chairperson of the Committee has worked with the chairperson of the By-Laws, Rules and Regulations Committee as that Committee drafted Standing Rules and Committee Guidelines for the Research-Travel Grants Committee.

N. Holliday, Chair

Acadian Entomological Society

The usual spring meeting of the AES was postponed, to be held in conjunction with the ESC meeting in St. John's. Thus, the AES has not met since the last ESC Governing Board Meeting.

The principal activity of the AES has been the organization of the 1989 Joint Meeting.

Financing the Joint Meeting has been a major concern. The AES provided $1000 in seed money. NSERC provided a grant of $2500. Important contributions have also been received from federal government agencies and private corporations. The $4000 contributed from the ESC is much appreciated. However, the ESC contribution to the annual meeting should be re-evaluated, if not for the 1989 meeting, then for subsequent meetings. Factors such as ongoing inflation and differential costs between regions (e.g. Newfoundland has a 12% sales tax on almost all items plus higher basic costs due to isolation and reduced competition) means that this money does not go as far as it did in previous meetings or other venues. Also, there has been little assistance from the provincial government and the small industrial base limits opportunities for donations.

Although the financial situation will vary from meeting to meeting, it is important that the ESC contribution to meeting costs be more finely attuned to conditions under which the meetings are held.

David Larson, Regional Director (AES)

La Société d'entomologie du Québec

La Société d'entomologie du Québec compte environ 220 membres. La dernière assemblée annuelle a eu lieu à Saint-Michel-des-Saints dans le cadre enchanteur de la Station écologique de l'Université du Québec à Montréal. De l'avis des participants, cette réunion fut un succès.

Un nouvel éditeur a pris charge de la Revue d'entomologie du Québec; il s'agit du Dr. Dave J. Lewis du Collège Macdonald. L'éditeur du Bulletin de la SEQ, le Dr. Pierre Martel, fera paraître deux numéros en 1989.

Au cours de l'année, l'exécutif s'est réuni à plusieurs reprises pour discuter des affaires de la Société. Les relations avec le public sont abordées de façon originale par la SEQ. La Maison des insectes, sise au Zoo de Québec, a acceuilli plusieurs dizaines de milliers de visiteurs au cours de la saison estivale 1989. L'Insectarium de Montréal est présentement en construction: cet équipement d'importance majeure permettra une meilleure éducation des gens de la région montréalaise. La Maison des insectes et l'Insectarium reflètent une approche nouvelle pour créer des liens avec le public: il'agit donc d'un dossier à suivre de près. En partie grâce à une subvention de la SEC, la SEQ publiera un bulletin de publicité pour promouvoir l'entomologie au Québec.

En août dernier, nous avons appris avec consternation le décès d'Alain Giard, président de l'Association des entomologistes amateurs du Québec. Alain a été frappé par la foudre alors qu'il travaillait à la plantation d'arbres sur l'Ile aux pommes, laquelle est située sur le fleuve St-Laurent.

Le Comité des espèces menacées travaille à la préparation d'un rapport ad hoc pour le Ministère du Loisir, Chasse et Pêches du Québec.

La prochaine assemblée annuelle aura lieu les 18-19 octobre 1989 à Ste-Foy. Le thème du symposium sera: "Cultivons nous la forêt pour le bénéfice des insectes nuisibles ?"
Enfin, le comité organisateur a proposé un programme pour la réunion conjointe SEQ-SEC à Montréal en 1991.

Charles Vincent, Rep. Société d'entomologie du Québec

Entomological Society of Ontario

The Entomological Society of Ontario celebrated its 125th anniversary in 1988. Sessions of the Annual Meeting of the Society held at the University of Guelph on October 14-16, 1988 were attended by 93 delegates. Meetings of the outgoing and incoming Boards and the Annual General Meeting of the Society were held at this time. The interim executive meeting was in Guelph on April 7.

Volume 119 of the Proceedings of the Entomological Society of Ontario was published in 1989 and consisted of 15 papers, two of which were by winners of the President's Prize competition.

R.P. Jaques, Regional Director (ESO)

Entomological Society of Alberta

The Entomological Society of Alberta held its 37th annual meeting during 21-23 September at Athabasca University in the northern Alberta community of Athabasca. This was the third in a series of meetings in rural Alberta intended to spread the word about entomology around the province. The meeting was hosted by Dr. Robert Holmberg. Dr. Donald Feener Jr. of the University of California at Los Angeles presented a fascinating keynote address entitled "Ant-decapitating flies (Diptera: Phoridae) and their headless hosts (Hymenoptera: Formicidae)" that made this director glad to be an uncle. Mr. Terry Thormin of the Provincial Museum of Alberta presented a colourful, well-illustrated after dinner talk about doing biology in tropical America. The scientific program, organized by Dr. Steve Nichols and Mr. Greg Pohl, included 18 submitted papers dealing with a wide range of investigations being pursued by Alberta entomologists. Of particular interest were presentations by Mr. Evan Gushel and Dr. Bill Nelson highlighting the joys of photographing both insects and those who study them. The Society was hosted to a free lunch by Dr. Terry Morrison, President of Athabasca University.

At its business meeting, the Society passed a resolution supporting efforts to establish a home for biting fly research in Canada. Members were distressed at the closing of the Canadian Biting Fly Centre and at the lack of systematic work on biting flies and arthropods of medical and veterinary importance in Canada. After some discussion, the Society supported trial membership of the Entomological Society of Canada in the Canadian Federation of Biological Societies. The following new officers were elected: Dr. B. Schaber (President), Dr. D. Langor (Vice President), Dr. R. Linowski (Secretary), Mr. G. Hilchie (Treasurer) and Dr. A. McClay (Regional Director to ESC).

The organizing committee for the 1990 joint ESC/ESA meeting, chaired by Dr. G. Pritchard, has been busy and arrangements are well in hand. The meeting will be held October 7 - 9 at the Banff Centre. The scientific program will include submitted papers and posters, workshops, and special interest discussion groups. One plenary symposium, "Systematics and Entomology: Diversity, Distribution, Adaptation and Application" will be held on October 8. There will be no student presentation competition. Suggestions for workshops or discussion groups will be gladly received by the organizing committee. The meeting will also feature Rocky Mountain scenery, Alberta autumn weather, an evening

barbeque on the 8th and the meeting banquet on the 9th and a chance to see real cowboys.

J. R. Spence, Regional Director (ESA)

Entomological Society of British Columbia

The Entomological Society of British Columbia enjoyed a successful year in 1988 - 89. The annual meeting was held at Vancouver Research Station, Agriculture Canada on 26 October 1988. Highlights of the meeting included the presentation of the two best student paper awards: the Harold Madsen Award to Ph.D. candidate, John Richardson, Department of Zoology, U.B.C. and the James Grant Award to M.Sc. candidate Barbara Peterson, Department of Biological Sciences, S.F.U. These student paper awards were named in honour of the two noted entomologists and past active members of our Society.

A special lecture fund, the MacCarthy Lecture in Pest Management was established to honour the longtime contribution and services of Dr. H.R. MacCarthy ("Mac") to the Entomological Society of British Columbia.

As a results of increased fee structure in 1987 (regular membership: $15.00, student: $7.50; journal subscriptions: $15.00 in N.A., $18.00 elsewhere; and page charges: $45.00), the Society is financially sound.

During the fall executive meeting following the general annual meeting, it was noted that the 3-day post-congress (1988 International Congress of Entomology) tour was a great success and many new direct contacts have been established.

The Society sponsored a 2 1/2 day public education course on entomology for children. The course was run by Risa Smith and 15 children attended. Instead of purchasing children's books for schools, reviews of books will be provided for the schools and visits by entomologists will continue as requested by the schools.

Rob Cannings agreed to contact entomologists in B.C., again, via the Society's newsletter, *Boreus*, to try to complete the list of entomologists in B.C. with pictures and biographical notes and send it to Dr. P. Riegert for the upcoming publication of profiles of entomologists in western Canada.

The Secretary was asked and agreed to send a copy of *Boreus* and a list of elected officers of the ESBC to both the Editor of the *Bulletin* of the ESC and the Secretary of the ESC to provide local news and current officers of the Regional Society.

The annual meeting of the ESBC will be held 25 October 1989 at the Pacific and Yukon Forestry Centre in Victoria, B.C.

Imre Otvos, Regional Director (ESBC)

Ad Hoc Committee on Pest Management Policy

Initially, this committee set out to revise the document, *Pesticides and the Environment*, in order to make it more timely in terms of pesticide knowledge and to better reflect current pesticide concerns. The three members of the committee thus started to review the document and comment where appropriate from their own perspective, each of which was professionally different. It was anticipated that this approach would ultimately provide a balanced view of the current role and use of pesticides in Canada, at least as far as insecticides are concerned.

Considerable progress was made by Dr. G. Kinoshita through his provision of critical comments

on the existing document in terms of current legislation and industry views of pesticide development, production and usage.

It was anticipated that a first draft of the revised document, incorporating similar contributions from the other two committee members would be ready by spring 1989 and a final draft by fall 1989.

At the spring 1989 meeting of the ESC Science Policy Committee, the Ad Hoc Committee on Pesticide Policy was renamed the Pest Management Policy Committee and given a new mandate to "prepare a document that addresses the larger subject of pest management, in which the position of the ESC, with respect (to) rational insect control, is clearly stated. It is understood that the text will include a section on the judicial use of insecticides." Progress towards this new objective has been limited by a number of factors, but it is hoped that the committee can regroup and direct its efforts towards its new objectives prior to the end of this year. New target dates for first and final drafts will be sent as soon as practicable. It is hoped that a method can be developed that will allow for the widest possible participation by the Society's members prior to production of the final report. This latter objective is a not yet clearly defined practice that uses not yet clearly defined methods and hence is subject to a large number of interpretational differences.

N. Angerilli, Chair

Ad Hoc Committee on Endangered Species of Insects in Canada

Our committee was appointed by President Eidt in late September 1988 with a mandate "to document the Canadian species (of insects) that fall into the various categories of endangered or extinct species recognized by the Committee on the Status of Endangered Wildlife in Canada" (COSEWIC). Since then, the President amended our mandate to "bring in a report with, not just a list of species, but some consideration of endangered habitats and consideration of the opinion that we might be better off if some species became extinct" (*Bull.* 20(4):2). We chose not to comment on the possible benefits of species extinctions because it would be too judgemental. With this report, we consider our task complete.

COSEWIC has no regulatory power or function, it is purely a committee for the evaluation and assignment of status. The listing of a species as endangered by COSEWIC merely draws attention to the questionable future of the species. Beyond this, the onus falls on a responsible agency, usually a provincial government, to act in such a way that would offset factors causing endangerment that would lead to eventual removal of the species from the endangered species list. COSEWIC's perspective appears to national rather than parochial, a species would have to be endangered in Canada as a whole before being listed.

There are two aspects associated with the protection of an endangered species: recognition that a species is endangered and some mechanism to afford protection to the species and its habitat. It is reasonable to expect that certain species of insects would become endangered over a relativelty short time period, quicker than enabling legislation could come into effect. Thus, legislation to protect a species and its habitat is the most urgent need at present.

A.W. Thomas, Chair

(Ed.Note: The report of the preceding committee has been greatly reduced (from its original 42 pages!). Copies of the entire report should be available from members of the Governing Board.)

Steering Committee on the Joint CPS/ESC Book Project

During the past year, D.C. Eidt has maintained the composition of the ESC Steering Committee and named Drs. D.G. Harcourt and C.R. Ellis as representatives of the ESC on the CPS Marketing Committee. He also signed a Memorandum of Agreement between the CPS and ESC together with Dr. L.N. Chiykowski, CPS President. Dr. Chiykowski appointed Dr. G.B. Ouellettte as co-ordinator of the French translation. Dr. R.J. Howard, Chairman of the CPS Steering Committee, and I met to review progress as well as to develop a timetable for completion of the book (Calgary, 21 June 1989), and a form letter was mailed to approximately 70 ESC members as a first call for illustrative material which is to be sent to Dr. Howard any time before the end of 1989. The ESC Steering Committee made plans for its first full meeing at the joint annual meeting of the ESC and AES at St. John's.

Costs to the ESC for the year 1988 - 89 included mailings (about $100) and approved travel for Dr. R.S. Vernon to attend the meeting in St. John's (about $1,000). For the year 1989 - 90, costs could be somewhat higher for mailings and there will be publication as well as book preparation costs, some of which may have to be money "up front" in an as yet unknown quantity. There may also be costs for travel and meetings, advertising and slide sets which are planned for sale along with the book. Total estimated expenses for 1989 - 90 for both societies amount to $168,000, assuming no delay or change in the publication schedule. However, this estimate includes editorial and secretarial costs in the amount of $2,000 which may not be incurred by the ESC because experience to date suggests that the flow of material and workload associated with word processing are very manageable. That may not be the case once the French version is underway, but $2,000 seems too low if secretarial services must be hired for that part of the project. Certainly, for 1989 - 90, the ESC can anticipate a cost of about $250 for mailings because each crop chapter must be circulated to members of the ESC Steering Committee and there will be about 20 such chapters, not counting incidental mailings and moving diskettes through the mail.

J.A. Garland, Chair

Canadian Association on Water Pollution Research and Control (CAWPRC)

Over the past five years, the journal of the CAWPRC, the *Water Pollution Research Journal of Canada*, has grown from two to four issues per year. Effective February 1989, two new co-editors have been appointed: J.M. Barica (Biology and Chemistry) and D. Chapman (Engineering and Technology). Processing of submitted manuscripts will be speeded up by the additional appointment of a managing editor to whom all manuscripts should be directed (Jean Stafford, Wastewater Technology Centre, 867 Lakeshore Rd., P.O. Box 5050, Burlington, Ontario, Canada L7R 4A6). The journal continues to welcome papers dealing with responses of aquatic insects to environmental perturbations.

The tradition of holding annual symposia, with a balanced program a biological and technological topics, was continued in 1988 - 89. A call for papers for the 25th Symposium to be held in February 1990 can be expected during the next few weeks.

In addition, an Eastern Regional Conference will be held on 20 October 1989 at Université du Québec à Trois Rivières. For information, please contact Professor Rodovan Popovic, Centre de recherche en photobiophysique, Université du Québec à Trois Rivières (819 - 376 - 3310).

The Sixteenth Annual Aquatic Toxicity Workshop (Winnipeg, Manitoba, 5 - 7 Nov. 1989) will be co-sponsored by CAWPRC. For information , call Sharon Leonhard (204 - 983 - 5108).

CAWPRC organized a first international conference on effects of environmental pollution on Arctic ecosystems. Persisting and increasing concern over Arctic pollution issues is currently leading to preliminary plans for a second such conference. For further information, please contact the undersigned (204 - 983 - 5004).

E. Scherer,
DFO, Central and Arctic Region,
Freshwater Institute
Winnipeg, Manitoba R3T 2N6

Auditor's Report

To the Members, Entomological Society of Canada.

We have examined the balance sheet of the Entomological Society of Canada as at December 31, 1988 and the statements of revenue and expenditure and equity for the year then ended. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests and other procedures as we considered necessary in the circumstances.

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

McCay, Duff and Company,
Chartered Accountants
Ottawa, Ontario
February 23, 1988

Entomological Society of Canada
Statement of Equity
For the Year Ended December 31, 1988

ASSETS

	1988	1987
CURRENT		
Cash	$126,452	$208,315
Accounts receivable	19,862	34,617
Advances to International Congress	28,142	15,624
Due from Scholarship fund	1,122	-
Accrued interest	8,646	6,629
Prepaid expenses	2,464	3,971
	186,688	269,156
INVESTMENTS (note 2)	369,975	364,939
FIXED ASSETS (note 3)	111,395	-
	$668,058	$671,774
ENDOWMENT FUND		
Cash	$15,920	$13,277
Accrued interest	564	562
Investments (note 2)	23,840	23,840
Due from General Fund	920	-
	41,244	37,679
	$709,302	$671,774

LIABILITIES

GENERAL FUND		
CURRENT		
Accounts payable	$17,604	$50,901
Deferred revenue	141,737	76,458
Due to Scholarship Fund	-	2,025
Due to Endowment Fund	920	-
	$160,261	$129,384

EQUITY

GENERAL FUND		
BALANCE - END OF YEAR	507,797	504,711
ENDOWMENT FUND		
BALANCE - END OF YEAR	41,244	37,679
	549,041	54,2390
	$709,302	$671,774

Entomological Society of Canada
Statement of Equity
For the Year Ended December 31, 1988

	1988	1987
GENERAL FUND	$507,711	$463,286
BALANCE - BEGINNING OF YEAR	3,086	41,425
Net revenue for the year		
BALANCE - END OF YEAR	$507,797	$504,711
ENDOWMENT FUND (note 4)	$37,679	$34,322
BALANCE - BEGINNING OF YEAR	3,565	3,357
Interest income for the year		
	$41,244	$37,679

Entomological Society of Canada
Notes to Financial Statements, December 31, 1988

1. SIGNIFICANT ACCOUNTING POLICIES

A. Furniture and equipment purchases are expensed in the year of acquisition.
B. Entomological Society of Canada is incorporated without share capital under Part II of the Canada Companies Act and is non taxable.
C. No depreciation is provided on the fixed assets of the Society.

2. INVESTMENTS

	1988	1987
GENERAL FUND		
Bonds, at cost (market value 1988 - $369,725, 1987 - $370,577)	$369,975	$364,939
ENDOWMENT FUND		
Bonds, at cost (market value 1988 - $25,580, 1987 - $25,828)	$23,840	$23,840

3. FIXED ASSET

		1988		1987
	Cost	Accumulated Depreciation	Net	Net
Building	$111,395	-	$111,395	-

4. ENDOWMENT FUND

The direction of the bequest, by which this fund was founded, states that without imposing any legal obligation, hope is expressed that the principal will not be eroded and that the income will be utilized to aid in the publication of *The Canadian Entomologist.*

5. STATEMENT OF CHANGES IN FINANCIAL POSITION

This statement has not been provided as management is of the opinion that it would not provide additional useful information.

STATEMENT OF REVENUE AND EXPENDITURE FOR THE YEAR ENDED DECEMBER 31, 1988

	Canadian Entomologist		*Memoirs* and Other Publications		Society		1988	
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
REVENUE								
Regular memberships	$14,917	$15,750	$2,485	$2,450	$14,917	$15,750	$32,320	$33,950
Student memberships	1,010	1,150	74	-	1,010	1,150	2,093	2,300
Sustaining memberships	150	150	-	-	150	150	300	300
Subscriptions	54,264	54,267	23,256	27,133	-	-	77,520	81,400
Reprints	14,589	15,000	-	-	-	-	14,589	15,000
Page charges	64,090	72,000	31,929	40,000	-	-	96,019	112,000
Back issues	3,690	4,500	-	-	-	-	3,690	4,500
Sales of Memoirs	-	-	5,911	3,000	-	-	5,911	3,000
Sales of Arctic Arthropods & Bibliography	796	500	-	-	-	-	796	500
Gain on currency exchange	-	-	-	-	2,451	-	2,451	-
Government grant	10,000	32,000	-	-	-	-	10,000	32,000
Contracts and services	-	-	-	-	984	-	984	-
Miscellaneous	-	-	-	-	4,015	4,000	4,015	4,000
	163,506	195,317	63,655	72,583	23,527	21,050	250,688	288,950
EXPENDITURE								
Publishing & mailing costs	82,065	106,000	51,743	50,000	-	-	133,808	156,000
Reprint costs	8,181	9,600	-	-	-	-	8,184	9,600
Bulletin publishing & mailing	-	-	-	-	11,401	11,400	11,401	11,400
Special reports	-	-	-	-	2,356	-	2,356	-
Salaries & benefits	46,295	47,417	13,664	13,996	12,765	13,074	72,724	74,487
Editor's expenses	4,421	5,000	2,653	3,000	-	-	7,074	8,000
Office	10,212	6,000	1,022	600	10,212	6,000	21,446	12,600
Professional fees	1,475	1,820	-	-	1,475	1,820	2,950	3,640
Prizes, awards, brochure, etc.	-	-	-	-	1,224	1,200	1,224	1,200
Honoraria	1,200	1,200	-	-	1,700	1,700	2,900	2,900
Committees:								
Membership	-	-	-	-	72	150	72	150
Science Policy	-	-	-	-	1,871	3,000	1,871	3,000
Other	-	-	-	-	-	700	-	700
Support of other organizations	-	-	-	-	3,804	4,850	3,804	4,850
Annual Meeting:								
Grant	-	-	-	-	-	-	-	-
Honorees	-	-	-	-	711	3,000	711	3,000
Governing Board:								
Interim Meeting	-	-	-	-	2,434	2,900	2,434	2,900
Annual Meeting	-	-	-	-	17,557	22,000	17,557	22,000
Other Meetings	-	-	-	-	2,098	1,500	2,098	1,500
President's discretionary expenses	-	-	-	-	1,668	3,000	1,668	3,000
General	-	-	-	-	280	2,500	280	2,500
	153,849	177,037	69,082	67,596	71,628	78,794	294,559	323,427
REVENUE (EXPENDITURE) FOR THE YEAR FROM OPERATIONS	9,657	18,280	(5,427)	4,987	(48,101)	(57,744)	(43,871)	(34,477)
Interest on investments	-	-	-	-	46,957	50,000	46,957	50,000
NET REVENUE (EXPENDITURE) FOR THE YEAR	9,657	$18,280	($5,427)	$4,987	($1,144)	($7,744)	$3,086	$15,523

ARTICLES

Presidential Address

A Message from Beyond?

The President of this Society is usually expected to have some words of wisdom to pass on to the members from his lofty perch at the end of his term. In the past 20 years, there have been some Presidential Addresses separate from the President's Report on the year's activities and some combined.

Every one back to 1969, when the *Bulletin* was born, dealt with matters as important today as at the time they were given. Every one commented on the downgrading of science in Canada, with particular reference to entomology. They commented on the bureaucratization of science, shrinking research funds and the absence of long term studies. They commented on the resultant lack of opportunities for our graduates to fully exploit their expertise, the degrading expectation by politicians that scientists should play political games and the impossiblity of adequately coping with current entomological problems and responding to public demand for acceptable pest control methods. Some referred to the need for greater public awareness, anticipating the stance that I have taken, not just public awareness of science, but also awareness of the plight of science and why it matters.

When the organizers of this meeting asked me if I wished to honour the tradition of a Presidential Address, I daringly said yes, having no idea of what I might talk about. You might expect me to talk, or even rant, about the feeble support for science in Canada, but you know my position on that, and I decided not.

You might expect something about scientific publishing or the publications of the the Society because of my past involvement. Publishing science, after all, is the most important thing the Society does. But I decided not.

I thought of suitable subjects a couple of times, but since I am getting old, I forgot what they were. I forgot to make notes, and if I hadn't, I would have forgotten where they were.

In late July, during the hottest week of the year, I landed in hospital for a reason quite unrelated to whatever stress this office might generate. I guess it gave me the chance to wind down a bit. From what follows, you might well wonder what kind of hospital I was in.

I don't dream often, but while in that restful state, I had a dream that was so vivid that I can still see the images in their full detail and colour. Not since I was a child had I been able to remember a dream two minutes after I awoke. Perhaps it was a screech in the I.V., but some hours later I realized that this was to be the subject of my address to you.

I will relate the dream to you without the vivid images (no slides) but stating what is significant of the detail and colour. By this time, you will think I overworked this business of President and blew a circuit, but I will go on and tell you what the dream means.

The Dream

I was in the meeting room at the Hugh John Flemming Forestry Centre where I have my office. I had to go in to get or to do someting to a picture on the far wall. The room was like the auditorium in the high school I left in 1945. It was filled with people, all men, all looked alike and dressed alike in dark suits and ties. The men farther back progressively lost detail as in a cartoon. I thought they were all psychologists or sociologists, or something like that, meeting to say the same things they had been saying at meetings for years, but in more complicated ways to impress each other with how much more they knew than they did when they last met.

I had climbed up on something and removed a large picture. Behind it was a large break in the plaster that was more of a large shallow cavity in decaying wood. It was filled with unnaturally large,

beautiful insects - beetles and moths mainly. None was pink, so I don't have the DT's. The large silk moths were there, cecropia, polyphemus and luna, but also a cynthia and prometheus which I didn't think had even been collected in New Brunswick. I knew them to be new records and of great interest to Tony Thomas, who was the keenest lepidopterist within earshot. I called "Dr. Thomas, come quickly" without saying why. A Dr. Thomas I had never seen before, intensely serious, wearing an immaculate lab coat and necktie, entered the room carrying a large, cylindrical, glistening jar, which I took to be the absolute latest thing in collecting equipment. The people in the room watched like robots as he crossed the room, expressionless except for an unchanging serious frown. He placed the cynthia and prometheus in the jar, turned and left the room by the double doors, both of which swung open in majestic fashion.

I looked back at what was a seething mass of large but not overlapping beautiful insects. I saw a large noctuid with a wingspan about as wide as that of a swallow. It was of a pure black andwhite tweed pattern of the sort known as "hound's tooth" with flecks of blue or green. I somehow knew it was rare. I picked it up as carefully as I could so as to dislodge as few scales as possiblee and hastened after Tony.

I passed through the double doors at the other side of the auditorium and found myself in the administration section. I was surrounded by walnut panelling, bevelled glass and marble floors which contrasted sharply with our stark laboratories, which resembled the pre-World War I vintage labs where I studied in the old Entomology and Botany Building at the Ontario Agricultural College in 1950.

I am not aware of where I was going, but found myself on a sidewalk on a paved street in St. John's, where there were some flat-topped houses and some vacant lots with uncut grass but no trees. I was more concerned about the moth which was squirming in my hand. It had turned into a bird which had got its wings loose, but did not flap them as I expected. It looked up at me and spoke. "We wouldn't be rare if you [humans] didn't plow our eggs off the streets every winter."

Interpretation

The people in the room were faceless and pretentious. Those are qualities not becoming to scientists.

The embellished papers with no new substance. This reminds me that pretentiousness may get you far at first, but one is eventually found out. One might even become administrator.

Large beautiful insects behind a picture? Indeed, one discovers things in the most unlikely places. We should keep our eyes open.

Insects outside their known range, and the rare or new species. These symbolize the fact that there is a great deal we don't know.

Not that Tony is frivolous about his work, indeed quite the opposite, but the "new Dr. Thomas" tells us to be serious and dedicated to what we do.

The collector was not the ridiculed stereotype man with the net and pith helmet. He was serious and proud. We really don't need the white shirt, tie and lab coat to be proud of the small part each of us plays in advancing entomology, which is the stated objective of our Society.

The glistening collecting jar tells us not to go for every fancy expensive gadget to decorate our labs. Make use of the best and newest but simplest devices and methods that will do the job.

The marble halls of administration. We've heard lots of figures about how little Canada invests in research compared with competing nations but I often wonder how much of it really goes to this heavy and ceaselessly increasing burden we all bear. Comparisons among nations of percent GNP spent on research might not mean much because of what each nation calls research. The figures for Canada may include some overhead that is justified, but much goes to the treadmills of endless "strategic plans" and hierarchical reorganizations complete with carpets and coffee tables? Rather than reduce the amount of non-productive time by researchers, such activities increase it.

The moth that turned into a swallow. This told me that things are not always as they seem.

The most incongruous part of the dream is the snowplow and the swallow's eggs. But is it? In spite

of all the talk about global change and species extinctions, the swallow simply and poignantly stated the basic truth. Man is usurping the habitats of its other rightful tenants.

Please don't, as I did at the beginning, denigrate your bretheren in other branches of science. Who is to judge in the end, who will make the greatest positive make on the future?

You, of course, may interpret this dream any way you like. But somebody, perhaps my own subconscious, was trying to tell me something to pass on to you.

D.C. Eidt, Past-President

Discours du Président

Un Message de L'Au-Dela

Lorsqu'il parvient à la fin de son terme, on s'attend d'habitude à ce que le président de cette Société offre aux membres quelques mots de sagesse du haut de son perchoir. Au cours des 20 dernières années, certains présidents ont jugé bon de présenter leurs discours et leurs rapports d'activités de fin d'année sous deux formats séparés; d'autres on préféré les combiner.

Tous, à compter de 1969, lorsque fut fondé le *Bulletin* , ont traité de questions toutes aussi importantes aujourd'hui qu'elles ne l'étaient à l'époque de leur présentation. Chacune de ces présentations présidentielles a commenté l'affaiblissement des sciences, particulièrement dans le domaine de l'entomolgie. Elles ont commenté la bureaucratisation des sciences, l'appauvrissement des fonds destinés à la recherche et l'absence de recherche à long terme. Elles ont commenté l'impossibilité pour plusieurs de nos diplômés d'exploiter à pleine mesure leur expertise, l'impression déshonorante qu'ont des politiciens que les scientifiques devraient jouer le jeu politique, et l'impossibilité de résoudre les problèmes entomologiques tout en réagissant aux demandes d'un public qui exige des méthodes acceptables de répression contre les ravageurs. Certains ont fait allusion au besoin de relever le niveau de sensibilisation publique, anticipant en ceci la position que j'ai prise, soit non pas uniquement une plus grande sensibilisation du public au niveau des sciences, mais aussi une appréciation pour les difficultés qu'éprouvent les chercheurs, et la nécessité d'y porter attention.

Lorsque les organisateurs de cette réunion m'ont demandé si je voulais suivre la tradition du Discours Présidentiel, j'ai audacieusement acquiescé, n'ayant aucune idée de ce que j'aurais à dire. D'aucuns voudraient peut-être m'entendre parler, ou même tempêter, contre le minable support que reçoivent les sciences au Canada, mais vous connaissez tous mon opinion là-dessus et j'ai donc résisté à la tentation.

D'autres souhaiteraient peut-être m'entendre discuter de publications scientifiques ou des publications de la Société, compte tenu de mon implication par le passé. La publication d'études scientifiques est, après tout, la plus importante fonction de la Société. Mais j'ai également décidé de m'en abstenir.

J'ai pensé à des sujets appropriés à quelques reprises mais, étant donné mon âge avancé, j'ai oublié ce qu'ils étaient. J'ai oublié de prendre des notes et, même si je l'avait fait, j'aurais oublié où je les avais remisé.

Vers la fin de juillet, en pleine canicule, je me retrouvais à l'hôpital pour des raisons médicales n'ayant rien à voir avec le stress normalement associé à cette organisaion. Ça m'a toutefois permis une certaine détente. Mes propos vous porteront probablement à vous interroger sur la sorte d'hôpital où j'ai été hébergé.

Je rêve rarement, mais m'étant retrouvé dans cet état paisible, j'ai fait un songe tellement réaliste

que je vois encore les images dans tous leur détail et couleur. Il faut remontrer à ma naissance pouvoir me rappeler d'un songe deux minutes après m'être éveillé. Peut-être faudrait-il soupçonner l'addition de "Screech" à mon I.V., mais tous toujours est-il que quelques heures plus tard je réalisais que ce serait le sujet de ma présentation aujourd'hui.

Je vais raconter mon songe sans les images trop réalistes (aucune diapositive) mais je m'attarderai là où le détail et la couleur revêtent de l'importance. Au risque de vous faire croire que j'ai outrepassé mes prérogatives de Président, et sauté un circuit, je continuerai de vous donner l'interprétation de mon rêve.

Le Rêve

Je me trouvais dans la salle de réunion, au Centre forestier Hugh John Flemming où j'ai mon bureau. J'avais dû y entrer pour enlever ou faire autre chose à un tableau attaché au mur du fond. La salle ressemblait à la salle de conférences de l'école secondaire que j'ai quittée en 1945. Elle était remplie d'hommes qui se ressemblaient tous et portaient un habit et une cravate noirs identiques. Les hommes plus à l'arrière me semblaient progressivement plus embrouillés. Je les imaginais tous psychologues ou sociologues, ou de types semblables, s'étaient réunis pour ressasser les mêmes choses qu'ils s'étaient redits à des réunions depuis des années, mais de façon beaucoup plus compliquée pour s'impressionner le uns les autres avec le nouveau bagage de connaissances acquises depuis leur dernière réunion.

J'étais grimpé sur un objet quelconque et j'avais enlevé un grand tableau. Derrière celui-ci se trouvait une grosse fente dans le plâtre, qui faisait partie d'une autre grosse cavité dans le bois pourri. Cette cavité était remplie d'énormes et beaux insectes - coléoptères et papillons surtout. Aucuns de ceux-ci n'étaient roses, donc pas question ici de délire! Les gros bombycidés y étaient, ainsi que les cécropias, les polyphèmes et les papillons lune, mais également une cynthia et un saturnide du cerisier que je ne croyais pas avoir été recueilli au Nouveau-Brunswick. Je savais qu'il s'agissait de nouvelles espèces pour la province et de grand intérêt pour Tony Thomas, lépidoptériste enragé juste à portée de voix. J'appelai: "Vite, venez Dr. Thomas," sans expliquer pourquoi. Un Dr. Thomas que je n'avais jamais vu auparavant, a la mine très sérieuse, revêtu d'un sarrau blanc immaculé, entra dans la salle portant un gros bocal cylindrique tous ruisselant qui me donnait l'impression d'être le summum du raffinement en équipement de collection. Tels des automates, les gens le suivaient des yeux lorsqu'il traversa la salle sans témoigner la moindre expression, sauf pour un froncement figé des sourcils. Il plaça la cynthia et la saturnide dans le bocal, fit volte-face et quitta la salle par les doubles portes qui s'ouvrirent majestueusement sur son passage.

Je laissai tomber mon regard sur une masse bouillonnante de beaux insectes. Je vis une immense noctuelle possédant presque l'envergure d'une hirondelle. Elle était d'une colorée d'un mélange de pures couleurs noires et blanches auxquelles étaient entremêlées des mouchetures vertes ou bleues. Je savais que j'avais affaire à un insecte rare. Je le ramassai délicatement afin de lui enlever le moins d'écailles possible et m'empressai de trouver Tony.

Je sortis par les doubles portes de l'autre côté de la salle de conférences pour me retrouver en bas, dans le secteur administratif. J'étais entouré de panneaux de noyer, d'un vitrage biseauté et de planchers en marbre, le tout contrastant nettement avec nos austères laboratoires lesquels ressemblent aux anciens laboratoires, construits avant la première guerre mondiale, où j'ai fait mes études dans le vieil édifice d'Entomologie et de Botanique, à l'Ontario Agricultural College en 1950.

J'ignore où j'allais, mais me voilà sur le trottoir d'une rue pavée de St. Jean, Terre Neuve, où il y avait des maison à toits plats et quelques terrains vacants en friche dépouillés d'arbres. J'étais beaucoup plus préoccupé par le papillon qui se tortillait dans ma main. Il s'était transformé en oiseau qui, malgré les avoir libéré, ne réussissait pas à battre des ailes comme je m'y attendais. Il me fixa et dit: "nous ne serions pas rares si vous [humains] n'insistiez pas à déblayer nos oeufs des rues en hiver.

L'Interprétation

Les gens dans la salle étaient prétentieux et avaient tous la même physionomie, deux qualités peu enviables pour des scientifiques.

Des communications enjolivées, dépourvues de substance nouvelle. Ceci me rappelle que, même si la prétention peut mener loin au début, le prétentieux est éventuellement démasqué. Ça pourrait peut-être même mener à un poste d'administrateur!

De beaux gros insectes derrière un tableau? En effet, les découvertes se font dans les endroits les plus invraisembables. A nous de toujours avoir l'oeil ouvert.

Des insectes hors de leur aire connue de distribution et les espèces rares ou nouvelles. Ceci illustre bien la portée de notre ignorance.

Non pas que Tony soit un chercheur frivole, bien au contraire, mais le "nouveau Dr. Thomas" nous suggère d'être sérieux et très assidus à notre travail.

Le collectionneur n'était pas le ridicule stéréotype de l'homme avec un drôle de casque agitant un filet. It était sérieux et fier de sol. Nous n'avons plus vraiment besoin de la chemise blanche, de la cravate et du sarrau pour s'ennorgueillir de la contribution si minime soit-elle que chacun de vous apporte au progrès de l'entomologie, un des buts que s'est fixée notre Société.

Le ruisselant bocal de collection nous invite à ne pas seulement rechercher les accessoires scientifiques dispendieux des plus en vogue pour décorer nos laboratoires. Servons-nous des meilleurs et des plus récents moyens et méthodes, mais utilisons aussi les plus simples qui soient pour accomplir la tâche.

Les salles de marbre du secteur administratif, on a beaucoup entendu parler du peu d'argent qu'investit le Canada en recherche comparativement aux pays qui lui font concurrence, mais je me demande souvent quel montant de cet argent sert en fait à alléger de fardeau de plus en plus lourd que nous devons tous supporter. Les comparaisons entre nations du pourcentage du PNG consacré à la recherche sont suspectes puisque chacune a sa propre définition. Les chiffres au Canada peuvent englober certains frais généraux justifiés, mais reste à savoir le montant consacré aux interminables "planifications stratégiques" et réorganisations hiérarchiques invariablement accompagnées de nouveaux tapis et tables à café. Plutôt que de réduire les périodes non-productives du chercheur, ce type d'activités les multiplient.

La métamorphose du papillon en hirondelle. Celle-ci me signifia que les apparences sont souvent trompeuses.

La partie la plus bizarre de mon songe est la charrue et les oeufs de l'hirondelle. Mais est-ce vrai? Malgré tout ce qu'on entend dire sur les perturbations terrestres et l'extinction d'espèces, l'hirondelle exprima de façon simple et déchirante le réalité essentielle. L'homme usurpe sur les habitats des autres occupants légitimes de notre planète.

N'essayez pas, je vous en prie, comme je l'ai fait au début, d'abaisser vos confrères les autres disciplines scientifiques. A qui revient-il en definitive de juger qui de nous offrira la plus importante contribution aux générations à venir?

A vous d'interpréter mon songe, mais quelqu'un, peut-être était-ce mon propre subconscient, tentait m'envoyer un message pour que je vous le tansmette.

D.C Eidt

Gold Medal Address

Biological Control: Its Potential for Future Agriculture

by

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It is indeed a great honour to receive the Society's Gold Medal, an award for which I would like to thank especially the President, Dr. Douglas Eidt and the members of the Achievement Awards Committee. While I gratefully accept this recognition, I must share it with my students and research associates, both past and present, who not only have participated in my work on aphids and aphid parasitoid interactions but, more often than not, have contributed key ideas and observations. In addition, I have benefitted greatly from discussions with my fellow entomologists at Simon Fraser University, especially John Borden and Bernie Roitberg. I am particularly pleased that John and Bernie as well as Conrad Cloutier, one of my former students, are here in St. John's to share with me this great honour.

For my presentation, I have selected the topic "Biological Control: Its Potential for Future Agriculture". Biological pest control celebrates its 100th anniversary and, one would assume, is now well established as a science and as a technology. However, biological control has retained in the public mind an image that it is quite different from that of any other method of pest control, in spite of the numerous books and articles written on the subject. Biological control is widely regarded as nature's way of controlling pests, as a method that depends mainly on man's willingness to let nature do her job.

The spectacularly successful control of the cottony-cushion scale (*Icerya purchasi*) in California through the introduction of natural enemies from Australia remains as powerful an example of biological control for today's students as it must have been for Albert Keobele and his fellow entomologists 100 years ago. While it is not suprising that entomologists should be fascinated by the behaviour of insect parasitoids and predators, biological control and conservation are very much public issues today.

In spite of the fact that early prophets of environmental doom and widespread starvation have been proven wrong, the signs of increasing pollution and environmental stress are all too common and can no longer be ignored: whether it is acid rain, PCB's, soil erosion, water shortages or increase in the global temperature, the consequences of poor land management practices and unchecked industrial growth are potentially serious. "If the present growth trends in world population, industrialization, pollution, food production and resource depletion continue unchanged, the limits to growth on this planet will be reached some time within the next 100 years"(Club of Rome, 1972).

While industrial man can be wasteful and often short-sighted, human society has the capacity to adapt quickly to changes, especially if the refusal to change entails financial risks. In Canada, we are indeed more fortunate than many other nations in that we can still enjoy vast areas of natural environment and ample resources of clean water and fresh air. This does mean, however, that particular Canadian farmers are among the most efficient in the world in growing crops under often harsh climatic constraints. This productivity, however, has been achieved only with large inputs of inorganic chemicals: with fertilizers to support increased yields and with pesticides to protect produce against pests in the field and during storage. The consequences of intensive agriculture on a global scale, are increasingly predictable. Among the most obvious are:

1) an ever-increasing need for fertilizers to achieve or maintain relatively small gains in production;

2) a need for new and more powerful pesticides to combat the increasing number of animal and plant pests and pathogens that have become resistant to conventional pesticides;

3) a shortage of fresh water to grow crops under irrigation and

4) contamination of soil and ground water by fertilizer and pesticide run-offs.

These problems are compounded by:

5) atmospheric changes (the so-called greenhouse effect) resulting from industrial pollution and deforestation, especially the loss of the tropical rain forests to subsistence agriculture;

6) the loss of productive farmland to urban sprawl and

7) the loss of animal and plant species resulting from habitat destruction.

This list is by no means exhaustive, but it does indicate the range and the scale of the problems that must be addressed. It is not surprising then that, among global planners, the development and implementation of sustainable agricultural production systems has become a prime objective. Although the term "sustainable production" permits several interpretations, in broad terms, the aim of sustainable agricultural systems is to achieve a long-term balance between inputs and outputs with minimum ecological disturbance.

Implicit in many of the concerns about environmental degradation is the assumption that future agricultural systems must be designed to minimize (ecological) risks rather than to maximize profits. If this assumption is correct, it implies further that the ultimate objective of systems management (besides sustainable yields) is the prevention of pest outbreaks rather than pest control.

It is in the context of pest prevention where biological control can make its greatest contributions. Although classical biological control through introduction and establishment of exotic agents is likely to remain the most important method of biological pest control, we must develop a much broader arsenal of uses for natural enemies. Here are several ways in which this can be done:

1) periodic releases of mass-produced parasitoids and predators;

2) use of attractants (or their synthetic analogues) and of supplementary food to enhance enemy activities;

3) modification of planting and harvesting times and of agricultural procedures to provide shelter and hibernation sites for natural enemies and competitors of pests;

4) use of special purpose strains, including resistant plant and animal varieties and

5) last , but by no means least important, application of molecular technology to increase natural enemy impact and plant defenses.

Whether or not these objectives can be achieved will depend, I suggest, largely on our ability to integrate biological control into efficient agricultural production systems. This challenge applies both to intensive agriculture and to subsistence farming, although the latter may offer opportunities for the implementation of ecologically sound farming practicies.

What I wish to emphasize here is that biological control in its various forms and applications represents a key component of systems management. The full benefits of research into natural enemies and pests can be realized only if such research is complemented by research at the level of whole ecosystems. Rather than searching for a general theory of ecology, we need to recognize the complexity of systems interactions, including the influence of human activities. We can achieve our hopes for a healthy environment only if we can maintain realistic production goals and produce enough food for a hungry world.

In the past, Canada has played a key role in biological pest control and the names of many Canadian entomologists are associated with the development of biological control theory and practice. Although this work continues at the various agricultural and forestry centres and the universities, it would seem timely to re-examine and, if necessary, to strengthen our efforts at a time when public support for ecological research is almost unparalleled.

I shall use the remainder of my time to paint in broad strokes what, in my opinion, might be done

now. Successful biological control offers several important advantages over other kinds of pest control, in particular chemical control. Biological control tends to be long-term. It must be pointed out, however, that it may not always be feasible to achieve "complete" control (except under specific and generally limiting conditions), although a reduction in pest damage is well within reach.

Thus, biocontrol efforts should not be measured against such examples of classical biological control successes as the control of cottony-cushion scale in California, of prickly pear (*Opuntia* species) in Australia and South Africa and, more recently, of cassava mealybug (*Phenacoccus manihoti*) in subsaharan Africa.

I reject the criticism that biological control is ineffective. Although some 70-80% of all attempts have been classified as failures, that is, had no obvious effect on pest numbers or pest damage, this percentage is certainly not worse, and in fact might be better, than that of other control procedures.

The criticism that biological control is unpredictable is more serious, especially if we take into account that farmers (like other producers) tend to be averse to production risks. Biological control workers have been unable to explain in a coherent fashion successes and failures and, rather bravely, often insist that biological control requires both art and science.

Personally, I prefer to use the term experience rather than art, because it implies that we are capable of learning from past attempts. It is probably irrelevant to the general public (and, by extension, to the political decision makers) how biological control achieves its successes, whether by ecological theory or by magic, as long as it is safe and cost effective.

I am not convinced that biological control workers have addressed either of these two criteria, safety and effectiveness, in a realistic manner. Certainly, perceptions about the general safety of biological control procedures differ widely. Many biocontrol experts insist that natural enemies, especially insect parasitoids and predators, do not represent a risk to non-target organisms. Critics, by contrast, often express the fear that introduced natural enemies will attack related species once the target pest has been eliminated. Such concerns can no longer be ignored and should therefore be addressed seriously. It is safety, more than any other issue, that will determine if and to what extent biological control will become part of future agricultural management.

The argument that biological control agents, if handled by experts, represent no environmental risks is weak. It may be more convincing to show that all control decisions, including the decision to do nothing, have certain costs and benefits associated with them. Attacks on non-target organisms are always undesirable, but they may constitute an acceptable ecological price to be paid for the control of a serious pest.

To reassure their critics, biocontrol workers must prepare a comprehensive ecological impact assessment before implementing any control procedures. Risk assessment, of course, is an integral part of any project that involves the importation and release of phytophagous species and pathogens; however, it is often ignored in programs involving insect parasitoids and predators.

One of the strongest arguments one can make in support of increased research is that biological control is cost-effective. A detailed analysis of the costs and benefits of biological control projects undertaken by the CSIRO in Australia has shown that, overall, benefits exceeded costs by a factor of 32 : 1 as compared with a 2.5 : 1 ratio for non-biological control research projects. The economic benefits from the successful control of skeleton weed (*Chondrilla juncea*) alone amounted to about A$ 261 million at a total cost of A$ 2.3 million. It should be noted that Australia has made very concerted efforts to employ natural enemies against a number of agricultural and forestry pests, and for that reason it might be inappropriate to use these values as a basis for estimating global biological control benefits. Nevertheless, it is safe to say that the net (social) economic benefits from research into an application of biological control methods are higher than for non-biological methods, on virtually any measure of cost-benefit analysis.

It is relevant to these considerations that most biological control efforts are undertaken by government agencies rather than by the private sector. Although the need for safety is usually given as the reason for restricting the importation and release of exotic agents to government laboratories, economics provides a more powerful argument. In general, biological control benefits are achieved at little or no direct cost to consumers and producers, a fact that explains and justifies the expenditure of public funds. This situation is in sharp contrast to the use and application of pesticides. Here benefits can be appropriated by a private supplier, and development and marketing costs should be paid by industry. An exception to this rule is the sale and distribution of mass-produced natural enemies for periodic releases in greenhouses because, again, investment costs can be recaptured.

I do not wish to give the impression that biological control is necessarily inexpensive but, rather, that it is cost effective. The problem with the term inexpensive is that it is often taken to mean cheap, with the result that many research facilities for biological control are under-equipped and outdated, especially facilitates for insect rearing and quarantine. More important, perhaps, the potentially greater contributions that biological control can make is limited by the resources invested in research and exploration. Most research budgets are totally inadequate to cover today's high costs of foreign exploration or to pay the technical support staff required for even moderately sized field experiments. Thus, many past and recent efforts listed as "failures" may not represent failures at all but reflect the level of effort put into these attempts.

If we wish biological control to assume a stronger role in agricultural production, we must take a close look at today's production goals. Agricultural systems, especially intensively farmed monocultures, are obviously designed to create and maintain conditions that favour crop production. Yields, and hence profits, are determined largely by the costs (and the availability) of inorganic fertilizers, pesticides and, for some crops, irrigation water. Managed agroecosystems normally are not functionally integrated because the majority of species comprising such systems have not evolved together. This lack of integration can result in ecological instability and ultimately in increased production and financial risks.

By comparison, sustainable agricultural systems are designed and managed with the goal to reduce ecological instability while maintaining reasonable production levels. The emphasis is on production that is consistent with long-term resource availability and environmental quality, with the latter having priority over short-term productivity gains and economic considerations.

Although farmers are often blamed for the overuse and perhaps the abuse of chemical pesticides, there is little evidence to support such criticism. Pesticide usage tends to decline whenever realistic alternatives are available, such as integrated pest management and biological control by natural enemies. In fact, many producer organizations firmly support the public's demand for safe and sustainable food production.

A major obstacle to the design and management of sustainable agricultural systems is our incomplete understanding of the structure and the functions of natural ecosystems. In particular, it is not clear whether the functioning of an integrated ecosystem is determined by (and hence can be understood through) the interactions between its component species.

Also, the importance of diversity for stability is not clearly established. While theoreticians continue to debate this issue, some countries (for instance, the U.K.), have achieved very encouraging results from increased animal and plant diversity through habitat management. This can be done by establishing refugia, such as hedgerows and weedy borders, in close proximity to field sites in order to provide shelter and hibernation sites for natural enemies. Most important for the farmer, improved pest control was achieved with little loss of productive farmland or without major changes in farming procedures.

Closer to home, the pioneering work into the ecology of apple orchards by A.D. Pickett, A.W. MacPhee and their co-workers at the Agriculture Canada Research Station in Kentville, Nova Scotia has shown a way to reduce pesticide applications by promoting natural enemies. There are many similar

examples where a change in systems design, such as strip cutting, minimum tillage and intercropping, has resulted in reduced pest incidence or pest damage.

I believe firmly that Canada has the potential, the resources and the will to contribute to the goal of sustainable agriculture by systems management. What we are lacking today is the organization to harness individual efforts into a joint program. What we need is a national institute to develop the necessary strategic and tactical models for future agriculture. In such an institute, biological control specialists would join efforts with agronomists, plant breeders and others to design production systems that are compatible with environmental conservation.

Perhaps in the past, Canadian entomologists were ahead of their contemporaries in other countries; it is time that we link up again with these past achievements in biological control.

References

Additional discussion and references can be found in *Critical Issues in Biological Control* (M. Mackauer, L.E. Ehler and J. Roland, eds. Intercept Ltd., Andover, Hants, 1989) and "Managing Planet Earth" (*Scientific American* 261 (3), September 1989).

Role of Entomologists in the Public Understanding of Science

By

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Sigma Xi, The Scientific Research Society, and the American Association for the Advancement of Science sponsored an International Symposium entitled "The Public Understanding of Science and Technology" in Orlando, Florida in October, 1988. Our former President, Doug Eidt, recommended that I, as Chairman of the Public Awareness Committee, attended the Symposium representing the Entomological Society of Canada and return with suggestions on how entomologists can better contribute to the public understanding of our science. This report summarizes the viewpoints and suggestions of Symposium speakers along with my own recommendations.

Why it is important for the public to understand science

Organizations such as Sigma Xi, the American Association for the Advancement of Science and the Royal Society of Canada have for some time expressed concern at the current level of public understanding of science and public recognition for the contributions to society made by scientists. Their basic thesis is that a familiarity with science by the lay person is a major element: in promoting national prosperity, in raising the quality of public and private decision-making, and in enriching the life of the individual. Improving the public's understanding of science is considered an investment in the future, not a luxury to be indulged in when resources allow. They also stressed that our democratic form of government cannot work in a complex society without a better understanding of scientific issues. For example, politicians supported with good advice can propose solutions to environmental problems, but those same proposals may not sell to a population that does not understand what is at stake.

Several speakers at the conference presented evidence to show that science is becoming increasingly remote to a large segment of society. More alarming, science and technology for many has become unpopular to the point of anger and hostility and has lead to high profiles for animal rights

activists, creationists, misinformed environmental groups, etc. We all have to question how this has happened and more importantly, decide what can be done to reverse the trend. All speakers concluded that it was the responsibility of scientists to improve communications with the public. Of course, not all scientists will engage in public awareness - some are not good at it or are simply too busy; however, all should at least be sympathetic to those attempting to popularize science and help wherever possible.

Also of concern to conference attendants were surveys showing that fewer young people today are being attracted to the sciences in high school and universities. One reason suggested that was over half the science teachers in the U.S. and Canada had received little or no university-level education in science and lack the skills necessary to make science exciting and to prompt young people into considering science as a career. Several speakers expressed concern at the mutual ignorance between scientists and politicians. Few scientists in Canada and the U.S. enter politics thus preventing an ideal opportunity for bringing the two sides together. There is clearly a strong case for politicians to have a good understanding of science because most of the important decisions made at all levels of government involve science and technology. More than ever before government officials need to appreciate the interconnections between basic, strategic and applied research.

Improved scientific literacy also is important for the individual. Those who have never been stimulated to enquire about how things work and lack the basic knowledge to pursue such inquiry are surely at a disadvantage in the modern world. The findings of science profoundly influence the way we think about ourselves and are an important part of our culture. Without some understanding of science, an individual is cut off from much of the richness of contemporary human thought.

David Perlman, Science Editor for the *San Francisco Chronicle*, reminded the audience that science is part of our culture and that scientists should be prepared to share the fruits of their efforts with the public just as writers, artists and musicians share their work. He stressed that science is the 'greatest of intellectual adventures' and that scientists owe it to society to share in some of their experiences. We must also accept that aesthetic experiences similar to those attained by the arts occur as one develops an understanding and appreciation of natural phenomena.

We also were reminded that public apathy towards science is partly to blame for current reductions in government funding and attempts by governments to privatize basic research. Apparently only the scientists are aware of the dangers of an apathetic public and if we are the only ones who recognize the problem, then it follows that we are the only ones who can provide solutions. Speakers from Australia and Great Britain supplied interesting evidence that levels of financial support from governments were linked to the level of public appreciation.

What can be done

Contributions are needed from scientists employed by governments, universities and industry if there is to be improvement in public awareness and appreciation of science. Besides encouraging their scientists to communicate more with the public, directors of government laboratories should provide release time for staff skilled at explaining research findings to the public. Deans of Science at universities likewise should identify faculty who are good at interacting with the public and provide them with the time and resources to expand their skill. Perhaps we need to emphasize the importance of dealing with the public when scientists are hired. In France, it is now a condition of employment for new government scientists to take an active role in explaining their science to the public.

Graduate students also must be alerted to the need for increased public awareness and trained as ambassadors. Our students become skilled at presenting papers at scientific conferences, but it would not be difficult to go one step further and train them in the art of explaining their science to the public. We could even make the presentation of a semi-popular lecture at a local high school part of graduate programmes. Such a move probably would be distasteful to many, but it would certainly emphasize our

commitment to the task at hand. The Natural Sciences and Engineering Research Council of Canada could suggest that about 2% of each operating grant be devoted to informing the public of the type of research supported. In Britain, there are awards for scientists who promote science.

Most universities and government laboratories periodically have open houses and such events should be undertaken as frequently as possible. Technicians and graduate students involved with open houses should be properly rewarded. It also is important to remember that many young people have received experiences at open houses that sparked careers in science. If all government laboratories and university departments allocated funds each year for two or three wall displays, the hallways would soon become lined with self-guided tours. Hallway displays are ideal for disseminating information and save much time and effort during open houses. Ideally, each researcher could be responsible for at least one hallway display. Most scientists have ample photographs of their research subjects that can be used in such displays. The popularity of poster sessions at conferences provides substantial material for hallway displays. The displays I have near my office and laboratory on topics such as "Common pests of Sudbury gardens", "Biology of the Spruce Budworm", "Biological Control of Weeds" and "What's new in Entomology" not only attract public attention but have encouraged other researchers into doing the same.

The mass media have a powerful influence on public understanding of science and more scientists must become comfortable in dealing with reporters. We must recognize that the scientific community and the media work in very different ways and are often ignorant of the other's procedures and constraints. Few scientists receive training in talking to reporters or explaining issues in front of a camera. Most young researchers have heard sufficient stories of misquoted scientists to keep them away from reporters. A conference on 'Science and the media' at the University of Calgary in September of 1988 revealed that the gap between scientists and journalists is wide, but that steps can be taken to bring the two sides together. Scientists must recognize the organizational restraints under which reporters work and learn to communicate their research at a level understandable to the general public. Journalists, on the other hand, must take a more active interest in science to develop their scientific literacy and avoid sensationalism. Experts in communications exist at most larger universities and government laboratories, and their services should be retained. Perhaps they could be invited to one of our national or affiliate meetings to lead a workshop on interacting with the media.

The media should be invited to all entomology conferences and the organizers should attempt to identify participants involved with issues of public interest. Wherever possible a news conference should be held to bring interviewers and keynote speakers together. Literature is available on how to run a successful media conference. One session of each entomology conference might be devoted to a public address. This was tried with success at an Entomological Society of Ontario meeting in Sudbury three years ago where Mary Galloway was invited to present a public talk on the biology of mosquitoes and blackflies.

Entomologists perhaps have an advantage over researchers in other fields in that most of our subject matter is easily explained to the novice. Researchers studying insects of forest or agroecosystems have an easier time explaining their accomplishments and breakthroughs than do, for example, neutrino physicists or molecular geneticists. Furthermore, we are fortunate that most members of the public (especially children) have an innate curiosity towards insects. Whenever possible, entomologists should insure that educators, especially at the elementary level, include insects in their curricula. Few teachers are aware of the potential of insects in explaining principles of biology or understanding the form and function of ecosystems. Executives of the seven affiliate societies of the Entomological Scoeity of Canada must charge themselves with expending grants from the national society to promote public awareness of insects and entomology. Rarely, if ever, has the entire budget for public awareness been requested. However, if one could tally the contributions of entomologists to public education, the results likely would be commendable compared to the practitioners of other sciences. Witness to this is the large number of general interest books and pamphlets on insects, along with articles written in semi-popular

magazines. Even so, our contributions to public awareness must be increased and it is likely that entomologists, as they have done in the past, will show leadership in dealing with this important social issue.

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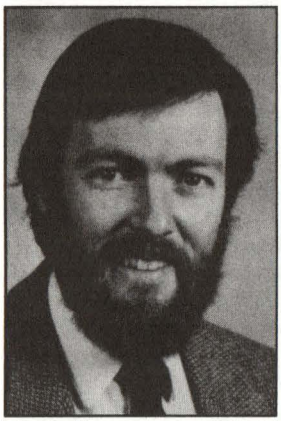


Entomological Society of Canada

C. Gordon Hewitt Award

Stephen A. Marshall

The 1989 recipient of the Entomological Society of Canada's C. Gordon Hewitt Award for outstanding achievement in entomology by an individual under 40 is Dr. Stephen Archer Marshall, Department of Environmental Biology, University of Guelph, Guelph, Ontario.

Dr. Marshall was born in Guelph, Ontario, December 9, 1954. He received his B.Sc. (Agriculture) in 1977 from the University of Guelph and his M.Sc.(Biology) from Carleton in 1979. He was awarded his Ph.D. in Entomology in 1982 by the University of Guelph after pursuing his studies in taxonomy under the supervision of Dr. David Pengelly. Dr. Marshall was appointed Assistant Professor of Entomology at the University of Guelph in 1982 and was promoted to Associate Professor in 1987.

Dr. Marshall's research has centred on the biosystematics of Diptera with special reference to the family Sphaeroceridae. Dr. Marshall has published a total of 40 refereed papers and 3 book chapters. He has supervised 6 M.Sc. and 2 Ph.D. candidates and has attracted considerable external funding to support his research and that of his graduate students since 1983. Stephen has also published articles for both the lay and technical press on insect zoogeography, cladistics, taxonomic principles, bog insects and public education in entomology.

Dr. Marshall is an excellent classroom teacher with great enthusiasm for his subject that he is able to transmit to both graduate and undergraduate students. He has a large teaching responsibility in insect biosystematics and natural history and he consistently receives high ratings in student evaluations.

Dr. Marshall has been an active member of the Governing Board of the Entomological Society of Ontario and its Treasurer for the past several years. He has recently compiled a list of entomologists in Ontario with their areas of interest for that Society. Dr. Marshall has also been a member of the Finance Committee of the Entomological Society of Canada and the Scientific Advisory Committee of the Biological Survey of Canada to which he has cheerfully devoted considerable time and talents.

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

Société d'entomologie du Canada
Prix C. Gordon Hewitt

Stephen A. Marshall

Le Dr. Stephen Archer Marshall, Department of Environmental Biology, University of Guelph, Guelph, Ontario est le récipiendaire de l'année 1989 du prix C. Gordon Hewitt de la Société d'entomologie du Canada: ce prix souligne la contribution exceptionnelle d'un chercheur de moins de 40 ans.

Le Dr. Marshall naît à Guelph, Ontario, le 9 décembre 1954. Il obtient son baccalauréat (Agriculture) en 1977 de l'Université de Guelph et sa maîtrise (Biologie) de l'Université Carleton en 1979. Il reçoit son doctorat en entomologie en 1982 à l'Université de Guelph pour ses recherches en taxonomie sous la direction du Professeur David Pengelly. On lui offre un poste de professeur adjoint au Département de biologie de l'environnement en september 1982 puis il est promu professeur agrégé en 1987.

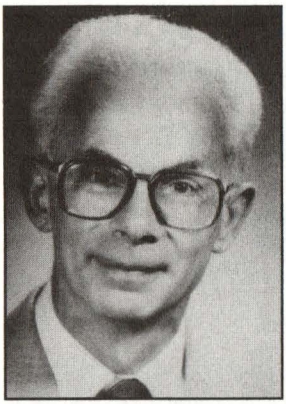
Les recherches de Dr. Marshall portent sur la biosystématique des Diptères avec un intérêt particulier pour la famille Sphaeroceridae. Le Dr. Marshall a publié jusqu'à maintenant 40 articles scientifiques, rédigé 3 chapitres de livres, dirigé 6 étudiants inscrits en maîtrise et 2 au doctorat, en plus d'obtenir des subventions considérables pour sa recherche et celle de ses étudiants depuis 1983. Stephen a publié des articles scientifiques et de vulgarisation sur la biogéographie des insectes, la cladistique, les principes taxonomiques, les insectes de tourbières et également des textes à caractère éducatif sur des sujets entomologiques.

Le Dr. Marshall est un excellent professeur dont l'enthousiasme se communique rapidement à ses étudiants. Malgré sa lourde tâche d'enseignant, qui porte sur la biosystématique des insectes et l'histoire naturelle, les évaluations de ses étudiants sont constamment positives à son égard.

Le Dr. Marshall est membre actif du Conseil de direction et depuis plusiers années trésorier de la Société d'entomologie de l'Ontario. Il a dressé dernièrement pour cette société une liste des entomologistes de l'Ontario en indiquant leur centre d'intérêt. Il s'est devoué considérablement en tant que membre du comité des finances de la Société d'entomologie du Canada et du comité consultatif sur les sciences de la Commission biologique du Canada.

La Société d'entomologie du Canada est fière de présenter le prix C. Gordon Hewitt au Dr. S.A. Marshall pour souligner sa contribution exceptionelle à l'entomologie canadienne.

Entomological Society of Canada
Gold Medal for Outstanding Achievement
in Canadian Entomology



Dr. Manfred Mackauer

The 1989 recipient of the Entomological Society of Canada's Gold Medal for Outstanding Achievement in Canadian Entomology is Manfred Mackauer, Centre for Pest Management, Department of Biological Sciences, Simon Fraser University, Burnaby, British Columbia. This award is presented in recognition of his many important contributions to entomological research and teaching.

Dr. Mackauer obtained his Ph.D. in 1959 at the Universität Frankfurt am Main in Germany. His research on the relationships of aphid parasitoids with their hosts was to be the principal focus of his scientific career. Honoured with a Research Fellowship from the German Ministry of Agriculture, he spent two additional years as a Research Associate at Frankfurt, and then moved to Canada in 1961 to become a Research Scientist at the Canada Department of Agriculture Research Institute, Belleville, Ontario. Dr. Mackauer accepted the position of Professor at Simon Fraser University, British Columbia in 1967. He was one of the founding members of the Centre for Pest Management at SFU and contributed significantly to the development of the Department of Biological Sciences.

He has published over 100 contributions, the majority in refereed scientific journals. He has also contributed a significant number of monographs, book chapters and invited contributions in symposia proceedings. His focus on aphid parasitoids was initially prompted by the very poor state of basic knowledge available on them. During much of the 1960's, he devoted his efforts to correcting this situation by producing a variety of mostly single-authored, refereed papers on biosystematics, taxonomic revisions, faunal catalogues for various parts of the world, host range and distribution of various species and genera of the Aphidiidae and parasitoid characterization for various aphid species of economic importance. In doing so, he unequivocally became the world's foremost authority on aphidiid parasitoids.

After his move to SFU, Dr. Mackauer's endeavours expanded to embrace other scientific interests, such as genetics, at both the fundamental and practical levels. He also applied these interests to his research which led to original contributions on genetically based viability in aphidiid populations and, most noticeably, to three extensive reviews of genetic aspects of mass rearing of insects with emphasis on biological control agents. His practical work centred on the assessment and evaluation of various parasitoid species, with strong emphasis on quantiative methods. His direct involvement in biological control attempts of the pea aphid at Belleville influenced him to choose the complex of parasitoids attacking this aphid in North America as his main focus of study. Since about 1970, a number of original studies conducted by him or under his initiative have resulted in *Aphidius smithi* being one of the most thoroughly evaluated aphid natural enemies in North America. Through these studies, he has contributed significantly to the understanding of host selection behaviour, host suitability and sex ratios in aphids.

Dr. Mackauer's direct involvement in the training of young scientists has been remarkable. Ten graduate students, including four Ph.D.'s, have obtained postgraduate degrees under his supervision. He is currently supervising 4 Ph.D., 3 M.Sc. and 15 Master of Pest Management students. To his graduate students, Dr. Mackauer is known as a demanding supervisor with a genuine interest in helping students to achieve their maximum potential.

Dr. Mackauer is one of the few Canadian scientists who enjoys truly international recognition. In

addition to review papers already mentioned on genetic problems of insect mass propagation, he has been invited to write chapters on such diverse topics as the world-wide importance of the aphid *Myzus persicae*, the impact of parasitoids on aphids, the parasitoid complex of the pea aphid, aphid natural enemy evaluation and technical aspects of parasitoid sampling and rearing. Dr. Mackauer has also frequently been invited to share his knowledge as speaker at other universities and at international meetings, symposia and workshops organized by major scientific institutions including the International Congress of Entomology and International Organization for Biological Control.

Another measure of his national and international recognition is his invited service as an external examiner for Ph.D. theses at four universities, three of them outside of Canada, and his service as an advisor to the United Nations' International Biological Control Program, Biological Council of Canada, University of California (Berkeley), International Fund for Agriculture and Development, Agriculture Canada Research Station at Summerland, International Institute of Tropical Agriculture in Nigeria and the Biosystematics Research Centre. He also is or has been a member of the editorial boards of four scientific and professional journals and the *Annual Review of Entomology* and is currently a member of the Population Biology Committee of NSERC.

Unlike many other dedicated researchers, Dr. Mackauer has contributed remarkably to the administration of his university and to the Entomological Society of Canada. He has been Director of the Centre for Pest Management at SFU since 1982 and from 1976 to 1981, was Chairman of the Department of Biological Sciences. He has been an elected member of numerous key committees and from 1975 to 1981 served on the University Senate and several committees thereof. The Entomological Society of Canada has long profited from Dr. Mackauer's dedication to his profession. He was on the Governing Board from 1975 to 1978 and more recently served as Chairman of the Publications Committee which oversees the quality and delivery of the excellent publications by which our Society is identified worldwide.

The Entomological Society of Canada acknowledges Dr. Manfred Mackauer as an internationally recognized scientist of outstanding calibre, a highly respected teacher and a leader in educational administration. He has clearly earned his selection as the 1989 recipient of the Entomological Society of Canada Gold Medal.

Société d'entomologie du Canada
Médaille d'or pour souligner la contribution exceptionelle
en entomologie canadienne

Dr. Manfred Mackauer

Le récipiendaire 1989 de la Médaille d'Or de la Société d'entomologie du Canada pour sa contribution exceptionelle à l'entomologie canadienne est le Dr. Manfred Mackauer, Centre for Pest Management, Department of Biological Sciences, Simon Fraser University, Burnaby, Columbie Britannique. Ce prix lui est décerné pour souligner ses nombreux articles importants en entomologie et la qualité de son enseignement.

Le Dr. Manfred Mackauer obtient son doctorat en 1959 de l'Universität am Main en Allemagne. Sa recherche sur les rapports entre les parasitoïdes aphidiens et leurs hôtes demeurera le centre d'intérêt de sa carrière scientifique. Grâce à une bourse du Ministère de l'Agriculture de l'Allemagne, il passe deux années supplémentaires comme agrégé de recherche à Francfort-sur-le-main, puis déménage au Canada en 1961 afin d'occuper un poste de chercheur scientifique auprès de l'Institut de Recherche d'Agriculture Canada à Belleville, Ontario. En 1967, le Dr. Mackauer accepte un poste de professeur

à l'Université Simon Fraser en Colombie Brittanique. Il est un membre fondateur d'un centre de lutte dirigée de l'Université Simon Fraser en plus d'avoir contribué de façon exceptionelle au développement du Département des sciences biologiques.

Il est l'auteur de plus de 100 articles, la plupart dans les revues scientifiques, et d'un nombre important de monographies, en plus d'avoir rédigé des chapitres de livres et contribué à des comptes rendus de colloques. Il a développé son intérêt pour les parasitoïdes aphidiens en prenant conscience du manque de connaissance de base sur ceux-ci. Il a consacré une grande partie de son temps au cours des années 1960 à corriger cette situation en publiant plusieurs articles scientifiques, dont il est la plupart du temps l'unique auteur sur la biosystématique, les révisions taxonomiques, les catalogues faunistiques pour diverses régions du monde, la distribution et répartition géographique des hôtes des espèces d'Aphidiidae et les articles identifiant les différent hôtes et les complexes de parasitoides de plusieurs espèces de pucerons d'importance économique. Il est ainsi devenu une autorité mondiale sur les parasitoïdes aphidiens.

Après son arrivée a l'Université Simon Fraser, l'intérêt du Dr. Mackauer s'est étendu à d'autres domaines, par exemple la génétique tant au niveau fondamental que pratique. Il a appliqué ses nouvelles connaissances à sa recherche pour éventuellement contribué de façon originale à la variabilité génétique des populations de pucerons, entre autres par trois revues exhaustives de l'aspect génétique des élevages à grande échelle des insectes, avec un intérêt particulier pour les agents de la lutte biologique. Ses travaux pratiques portent surtout sur l'évaluation de diverses espèces des parasitoïdes, et plus particulièrement sur les méthodes quantitatives. Sa participation à des essais de répression du puceron du pois à Belleville l'a amené à se pencher sur le complexe de parasitoïdes de ce puceron en Amérique du Nord. Grâce à ses recherches et celles qu'il a supervisées depuis les années, *Aphidius smithi* est devenu certes l'un des parasites naturels du puceron les mieux études en Amerique du Nord. Il a contribué de façon significative par ses travaux à la compréhension du comportement relatif à la sélection des hôtes y compris la convenance de l'hôte et la répartition des sexes observée en nature chez les pucerons.

La contribution du Dr. Mackauer à la formation de jeunes chercheurs est remarquable. Il dirige actuellement 4 étudiants inscrits au doctorat, 3 à la Maîtrise et 15 à la maîtrise avec spécialisation en lutte dirigée; déjà 10 étudiants dont 4 inscrits au doctorat on obtenu un diplôme d'études supérieures sous sa direction. Le Dr. Mackauer est perçu par ses étudiants comme un directeur exigeant qui cherche à soutirer le maximum d'eux.

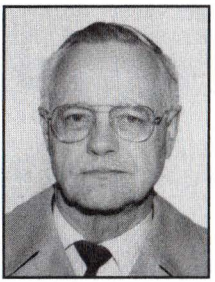
Le Dr. Mackauer est l'un des rares scientifiques canadiens qui jouit d'une réputation vraiment internationale. En plus des articles mentionnés précédemment sur les problèmes de génétique reliés à la reproduction à grande échelle d'insectes, on l'a invité à composer des chapitres sur divers sujets comme l'importance du puceron *Myzus persicae* à l'échelle mondiale, l'impact des parasitoïdes sur les pucerons, le complexe parasitoïde du puceron du pois, l'évaluation des ennemis naturels des pucerons et les asepcts techniques de l'échantillonnage et de l'élevage des parasitoïdes aphidiens. On l'a invité comme conférencier à des universités, réunions internationales, colloques et ateliers organisés par des instituts scientifiques internationaux dont le Congrés internationale d'Entomologie et l'Organisation internationale pour la lutte biologique.

Que le Dr. Mackauer ait agit comme évaluateur externe pour des thèses de doctorat dans quatre universités, dont trois a l'exterieur du Canada, et qu'on ait fait appel à ses services comme conseiller auprès d'organismes tels le Programme de lutte biologiques des Nations Unies, le Conseil canadien de biologie, l'Université de Californie à Berkeley, le Fonds international de développement agricole, la Station de recherche d'Agriculture Canada à Summerland, l'Institut international d'agriculture tropicale au Niger et le Centre de recherche biosystématique donne encore plus de crédibilité à sa compétence. De plus il est ou a déjà été membre du conseil de rédaction de quatre revues scientifiques et professionelles et de la revue *Annual Review of Entomology*, en plus d'être membre d'un comité sur la biologie des

populations du CRSNG.

Contrairement à plusieurs autres chercheurs, le Dr. Mackauer a contribué de façon remarquable à l'administration de son université et à la Société d'entomologie du Canada. Il est directeur du centre de lutte dirigée à l'Université Simon Fraser depuis 1982 et fut directeur du Département des Sciences biologiques entre 1976 et 1981. Il fut élu membre de plusieurs comités important et, de 1975 à 1981 a siégé sur le sénat de l'Université et sur plusieurs de ses comités. La Société d'entomologie du Canada a longtemps profité du dévouement du Dr. Mackauer pour sa profession. Il a été membre du Conseil de direction de 1975 à 1978 et plus récemment, directeur du Comité des publications, responable de la qualité et de la livraison des excellentes publications par lesquelles notre Société est reconnue de par le monde.

La Société d'entomologie du Canada reconnaît en Manfred Mackauer un scientifique remarquable de réputation internationale, un professeur très respecté, et un chef de file en administration universitaire. Il mérite pleinement sa nomination comme récepiendaire 1989 de la Médaille d'Or de la Société d'entomologie du Canada.



H. R. "Mac" MacCarthy

Mac has recently been the recipient of two unusual honors. One is that his former students at Simon Fraser University have collected a substantial sum to endow "The H. R. MacCarthy Lectureship in Pest Management". This will bring a leading specialist to give an annual lecture alternately at SFU and University of British Columbia.

The other honor is unique. There are in Ireland two MacCarthy clans. Each has a centuries-old title of hereditary chieftain. That of Mac's clan has the title of The MacCarthy Reagh. The last holder of the title was a philosopher, a Fellow of All Souls and a sometime Vice-Master of Balliol College, Oxford University. He was also Mac's older brother. When he died a few years ago, Mac inherited the title of The MacCarthy Reagh. However, he has never used this, although it would permit him to eliminate those first names that he has concealed so successfully all these years under the "Mac".

Mac has been an Adjunct Professor in the SFU Pest Management Centre since 1974. He was its Acting Director for more than two years. His speciality is improving the English of thesis-writers and others who need it - a category for which he has yet to identify an exception. There is no truth in the rumour that Mac got his speciality from kissing the famous Blarney Stone in Ireland which has the power of conferring eloquence. The truth is quite the opposite: Blarney Castle with its Stone was built and owned by ancestors of Mac and the Stone got its famed power from its association with the MacCarthy clan.

Mac worked in the Vancouver Research Station of Canada Agriculture from 1955 to retirement in 1976. In the late 1950's, he successfully resisted strong pressures from the then Director-General of the Research Branch, Ken Neatby, for promotion to Director's posts at stations in the Prairie and Maritime provinces and to Headquarters in Ottawa. Thereafter, they left him alone to make wine, grow

bonsai, and otherwide live happily in Lotusland. Earlier, before graduating from UBC and Berkeley, Mac was an agriculturist in Australia, a cattle rancher in the B.C. Interior and in Infantry Combat Intelligence in the Aleutians, Italy and N.W. Europe during World War II.

Bryan P. Beirne

Thelma Finlayson

"The Thelma Finlayson Society" is the title of the association of people who have donated money (over $37 million so far) to Simon Fraser University. This was announced at the Inaugural Dinner on 25 September at SFU's new Harbour Centre Campus, in downtown Vancouver, attended by various dignitaries including the British Columbia Minister for Higher Education. The citation by the President of SFU described Thelma in part as "an outstanding teacher and scholar, an extraordinary friend of the University and a woman of vision".

Thelma joined the SFU Department of Biological Sciences in 1967 after 29 years at Canada Agriculture's now defunct Biological Control Research Institute at Belleville, Ontario. She was promoted to Associate Professor in 1971, to full Professor five years later and became the University's first Professor Emerita in 1979. She developed entomology courses for the Master of Pest Management program and gave undergraduate courses in entomology and introductory biology at least once a year.

An active research program has produced about 40 published papers or monographs. Her speciality is the systematics and taxonomy of the final-instar larvae of the parasitic Hymenoptera. She has been Senior Supervisor of M.S. and M.P.M. students and member of the supervisory committees of many. She has been elected Honorary Member of the Entomological Societies of Canada and British Columbia and of the Professional Pest Management Association of B.C. The Professor Thelma Finlayson Fellowship is a bursary for students in the M.P.M. program.

Thelma served on Senate and on a great variety of standing and, especially, special committees in the University and also on provincial committees on education and on pest problems. She has the reputation for good and independent judgements and as a dedicated and outspoken opponent of pettiness or injustice. She was one of the original founders of the University's Academic Advice Centre in which she worked as a volunteer for some 20 years. In 1986, she was awarded the C.D. Nelson Memorial Prize, given once a year to someone "who has made an outstanding contribution other than academic to Simon Fraser University". In 1988, she was one of the finalists for the YWCA's Vancouver Woman of the Year in Education.

Although officially retired for more than 10 years Thelma normally puts in a full day's work at the University. Two days a week she is Volunteer Advisor in the Academic Advice Centre, taking the most serious and difficult student problems. Currently she is preparing a detailed who's who of the SFU Science Faculty. Recently, she went to Sulawesi and Java on behalf of the University to interview and recommend on 28 faculty members of Indonesian universities who were candidates for graduate fellowships in Canada. She has just completed a major piece of research on which she has been working for years: on the larvae of hymenopterous parasites of aphids worldwide (to be published as a *Memoir* of this Society).

It has taken Thelma more than 40 years to overcome feeling guilty if she did not work civil service

office hours and times. Nowadays, her work habits are somewhat more typical of an academic, she takes extended holidays in such peaceful places as Florida and California, Hawaii and Fiji, Queensland and Bali, and also sometimes visits relatives in the Toronto area.

Bryan P. Beirne

Décès d'Alain Giard

Le président de l'Association des Entomologistes amateurs du Québec, M. Alain Giard, est décédé en des circonstances tragiques. Je reprends ici quelques éléments d'un texte de Monique Salathé, Pierre Bélanger et Michel Chantal.

"Le 16 août 1989 Alain Giard a été frappé par la foudre alors qu'il travaillait à la plantation d'épinette sur l'Ile aux Pommes, île du fleuve Saint-Laurent située entre Rivières-du-Loup et Trois-pistoles. Alain est né le 2 juillet 1962 à Laval dans la région Montréalaise. Il fit ses études à l'école secondaire du Mont St-Louis, puis en technique du milieu naturel au CEGEP de St-Félicien. Sa première passion fut pour les oiseaux. En 1981, il commença à s'intéresser aux insectes, surtout aux Coléoptères. Alain accéda à la présidence de l'A.E.A.Q. en 1986. Il passa beaucoup de temps à s'occuper des affaires de l'A.E.A.Q. notamment de la revue "Fabreries", de la correspondance et de la liste des membres."

Alain m'a téléphoné quelque jours avant les événements tragiques pour savoir si je venais présenter une conférence pour l'A.E.A.Q. dans le comté de Portneuf. Je lui ai répondu que cela me faisait plaisir et que j'avais bien hâte de le rencontrer pour la première fois.

Charles Vincent
Saint-Jean-sur-Richelieu, Qué.

Hector Allan Richmond, 1902-1989

Hector (Hec) Richmond, R.P.F., died on July 9, 1989 in Nanaimo Regional Hospital. With his death, Canada has lost a distinguished forester, a pioneer of forest entomology, and a valued historian. He was a charter member of the Association of British Columbia Professional Foresters, a founder of the Western Forest Insect Work Conference and active in CIF/IFC affairs for years, being granted Honorary Membership in the Canadian Institute of Forestry in 1977.

"Hec" was born December 21, 1902 in Oklahoma of Scottish and English parents. They moved to Vernon, British Columbia in 1911. Through his after school work in the Department of Agriculture entomological lab, he met and worked as a bark beetle control spotter with Ralph Hopping, who in 1923 became responsible for the federal government's forest insect investigations in British Columbia. Subsequently, Hector was hired during the following summers to continue his early forest insect surveys. During 1927-29, while traveling by pack horse, his surveys included the Cypress Hills on the Alberta-Saskatchewan border and the Alberta foothills and national parks from the International Border to southwest of Edmonton. From 1929, his unpaid assistant, horse packer, cook and steadying counsel was his wife Vi.

He was awarded a B.Sc. in forestry from Oregon State University in 1928. Upon completion of a M.Sc. through MacDonald College in 1935, he returned to insect surveys in the East Kootenays area of southeastern British Columbia. During this period his involvement with a bear and an old soft-topped touring car even came to the attention of the House of Commons and was duly recorded in Hansard. The

start of a new forest insect research centre in Winnipeg found Hec and Vi again moving east for 8 years and contributing to the surveys and research on the jack pine budworm and the spruce budworm. A brief stint in Ottawa followed, before his return in 1945 as Officer-in-Charge of the federal laboratory in Victoria. Along with his administrative duties he continued his efforts in forest biology, this time experiencing the idiosyncrasies of travel in remote areas largely by boat in the 60 foot, "J. M. Swaine" and later the "Forest Biologist". Operating such vessels within the regulations of the land-locked, Ottawa-based Department of Agriculture was also not without its trials and amusements, aptly met and recorded by Hector.

In 1955 he was transferred to the laboratory in Quebec City, where his scientific and administrative skills were applied to the management of eastern spruce budworm in Quebec and adjacent New Brunswick. Then, in 1957, after more than 25 years of federal service, he accepted an offer to return to the west coast and became a consulting industrial forest entomologist, firstly with MacMillan Bloedel then with the British Columbia Loggers Association, which became the Council of Forest Industries. Much of the initial ambrosia beetle control work was done during this time along with joint control projects of the green striped forest looper and the black headed budworm.

Hector never truly retired. He continued to consult into the 1980's, and as an active author and historian recorded his autobiography in the very readable and informative book *Forever Green*. A sequel was being readied for the publisher at the time of his death. Hector saw forestry move from the era of the packhorse to the helicopter and contributed in many ways to the transition.

Hector was a man of varied interests and diverse talents, and he contributed to those around him in many ways. He was a gifted artist whose works were shown in Vancouver and Quebec. He was active for many years as an amateur actor. No after dinner speaker could surpass his recounting of the polysyllabic spelling by little Archibald Arsolin.

Hector Richmond will be remembered by all those who knew him with great affection and respect. The deepest sympathy of all members of the CIF/IFC go to his wife Vi and daughter Donnie.

G.A. Van Sickle

Hugh Cecil Huckett, 1890-1989

Dr. Hugh Huckett, eminent student of muscoid Diptera, died on 22 March 1989. He was in his 99th year, and despite failing eyesight, remained alert and active until shortly before his death. His long career was closely associated with Cornell University and began soon after the end of the first World War. His earliest taxonomic papers, on the female terminalia of muscoid genera (1921) and a revision of the Anthomyiinae of New York (1924) were notable for their expert use of chaetotaxy and unusually fine illustrations, establishing at once the author's reputation as a leading North American student of this important group. During the next thirty years came a steady production of solid generic revisions as well as shorter papers, and in 1965 a big monograph on the Muscidae of Canada, Alaska, and Greenland. Two more large papers on the Muscidae of California were completed ten years later.

Except for working visits to museums in Europe and North America, Dr. Huckett's research was done at the Agricultural Experiment Station at Geneva, New York and at his home on Long Island where he held a position at the Vegetable Research Farm at Riverhead. Visitors were received with quiet hospitality at his home, but he was extremely modest about his work, and had to be coaxed to part with reprints, claiming that they suffered from omissions and inaccuracies that he intended to correct in future publications. He enjoyed field work, and usually arranged collecting trips along with his European museum visits. Later, trips to Mount Katahdin, Maine, and other favoured areas sometimes found him

at nightfall still far from camp. Unperturbed, he would find a shelter for the night and failed to appreciate the anxieties for his safety expressed so forcefully by park wardens when he was finally located.

As a novice dipterist in the late thirties, I found his papers invaluable, especially in the series of publications on *Limnophora* and *Coenosia* (1932, 1934). In citing early European authors and providing information on synonymies, he was more meticulous than most dipterists of his time.

Hugh Huckett was born in Madagascar, the eldest of three sons of missionary parents. At the age of six, he and his brother Arnold were sent to England for their schooling. Under the care of elderly aunts in their grandfather's house, they first attended day schools in Essex, and later a co-ed boarding school in the Lake District which they enjoyed much more until the school was moved to Hertford and became strongly classical in its curriculum. Hugh left school without any clear plan for his future. He drifted from horticulture to farm labour, but soon realized he was unsuited physically and temperamentally for either. At this point his father intervened and, through a colleague arranged for Hugh to go abroad to the Ontario Agriculture College to learn scientific agriculture. He arrived in Canada in 1912, and the staff at Guelph soon advised him to give up the idea of practical farming in favour of research in entomology (advice which earned them their pupil's eternal gratitude). However, the young Huckett had scarcely begun his new studies when war broke out in Europe, and he felt the urge of his motherland's call to arms.

Dr. Huckett's experience of war was grim. Having signed up with the Canadian Expeditionary Force, he was among the first to be sent overseas and, with very little training, was posted to the Princess Patricia's Canadian Light Infantry, a unique formation raised and equipped privately by a wealthy citizen of Montreal. When Huckett arrived, it was already in the line under command of a British Division, and he received his baptism of fire when it was badly battered in one of the early German attempts to drive the British from their defences around the town of Ypres known as the Salient. On 2 June 1916, Huckett's regiment was defending the Salient when the enemy began an assault with a devastating artillery bombardment, killing the Divisional Commander and obliterating the forward trenches of the Canadian formation on the right of the Princess Pats. Huckett remembers the assaulting German troops going past him in waves, not bothering to fire their weapons. He was already out of action with his right hand smashed by a shell fragment. After he made his way to the rear, an RCAMC major at the Advanced Dressing Station made a decision not to amputate his hand. He was mustered out and transferred to hospital in England. The hand eventually healed itself enough to provide some muscular control over the permanently clenched fingers. He learned to hold and manipulate pinned specimens with it.

Back in Guelph in due course, the young veteran resumed his studies and obtained his BSA in 1919 and MA in 1921. From Guelph, he went to Cornell for his Ph.D., and following graduation in 1923, he was appointed Assistant Professor at the New York State Agricultural Experiment Station, Geneva, a post he retained until the end of World War II, when Dr. Palm recruited him to work at the Long Island Vegetable Research Farm, Riverhead.

Dr. Huckett was married for many years to Grace Watkins who died in 1964. There were no children. Since 1983, he had been a member of the household of a niece in upper New York state, where his increasing frailty was watched over with unfailing care and affection. One cannot help contrasting his eventful early life with the serene course of his career and the tranquility of his long retirement years. Both his brothers were killed in World War I, Arnold at Gallipoli, and the youngest, Oliver, went straight from school to his death on the western front in 1918.

G.E. Shewell

Note: For much of the information on Dr. Huckett's early life, I am greatly indebted to his niece Mrs. Meg McCrystal of Henrietta, New York. For details of his war service, I have relied on the official history of the Canadian Expeditionary Force, 1914-1919, 2nd. printing 1964, by Col. G.W.L. Nicholson.

NEWS OF ORGANIZATIONS / NOUVELLES DES ORGANISATIONS

International Commission on Zoological Nomenclature

Applications published in the Bulletin of Zoological Nomenclature

The following applications were published 23 June 1989 in the *Bulletin of Zoological Nomenclature* 46 (2). Comment or advice on these applications is invited for publication in the *Bulletin* and should be sent to the Executive Secretary, I.C.Z.N., British Museum (Natural History), Cromwell Road, London, SW7 5BD, U.K.

Case 2677 - ***Saissetia*** **Déplanche, 1859 (Insecta, Homoptera): proposed designation of *Lecanium coffeae* Walker, 1852 as the type species.**

Yair Ben-Dov, Department of Entomology, Agricultural Research Organization, The Volcani Center, Bet Dagan 50 250, Israel

Abstract. The purpose of this application is the conservation of the accepted interpretation of *Saissetia* Déplanche, 1859 as a genus of soft scale insects (Coccidae), with some species of economic importance. *Lecanium coffeae* Walker, 1852 is commonly taken to be the type species, but the genus was originally based on *Saissetia coffeae* Déplanche, 1859. The description of Déplanche's *coffeae* shows that it was a mealybug (Pseudococcidae), but the species cannot now be identified and the supression of its name is proposed.

Case 2695 - ***Fonscolombia*** **Lichtenstein, 1877 (Insecta, Homoptera): proposed designation of *Fonscolombia graminis* Lichtenstein, 1877 as the type species.**

Yair Ben-Dov, Department of Entomology, Agricultural Research Organization, The Volcani Center, Bet Dagan 50 250, Israel

Abstract. This application is submitted in order to designate *Fonscolombia graminis* Lichtenstein, 1877 as the type species of *Fonscolombia* Lichtenstein, 1877 in accordance with the type material, as a genus in the mealybug family Pseudococcidae. The original designation of *Coccus radicumgraminis* Fonscolombe, 1834 was based on a misidentification by Lichtenstein of *C. radicumgraminis* which is a species in the soft scale family Coccidae.

Case 2665 - ***Rosema*** **Walker, 1855 (Insecta, Lepidoptera): proposed conservation.**

Paul Thiaucourt, Muséum National d'Histoire Naturelle, 45 rue de Buffon, 75005 Paris, France.

Abstract. The purpose of this application is to conserve the notodontid moth generic name *Rosema* Walker, 1855 by giving it precedence over two unused senior subjective synonyms, *Zelica* and *Rhogalia*, both published by Hübner (1825).

Case 2658 - ***Protocalliphora*** **Hough, 1899 (Insecta, Diptera) and its type species *Musca azurea* proposed conservation of usage by designation of a replacement lectotype.**

Curtis W. Sabrosky, Systematic Entomology Laboratory, Agricultural Research Service, USDA, Washington, D.C. 20560 U.S.A.

Abstract. The purpose of this application is to conserve the customary use of the generic name *Protocalliphora* Hough, 1899 and its type species *Musca azurea* Fallén, 1817 for the bird blow flies, the larvae of which are obligatory bloodsucking parasites of nestling birds, and to avoid the confusing transfer of the names to a scavenger calliphorid long known as *Protophormia terraenovae* (Robineau-Desvoidy, 1830). The name *Protocalliphora* is well known in both entomology and ornithology.

The following applications were published 29 September 1989 in the *Bulletin of Zoological Nomenclature* 46 (3). Comment or advice on these applications is invited for publication in the *Bulletin* and should be sent to the Executive Secretary, I.C.Z.N., British Museum (Natural History), Cromwell Road, London, SW7 5BD, U.K.

Case 2672 - ***Castiarina*** **Gory & Laporte, 1837 (Insecta, Coleoptera): proposed conservation.**

J.A. Gardiner, Waite Agricultural Institute, Glen Osmond, South Australia 5064, Australia

Abstract. The purpose of this application is the conservation of the buprestid (jewel beetle) name *Castiarina* Gory & Laporte, 1837, by supression of the unused senior subjective synonym *Polychroma* Dejean, 1836.

Case 2690 - ***Helophorus brevipalpis*** **Bedel, 1881 (Insecta, Coeloptera): proposed precedence over *Helophorus crecitus* Kiesenwetter, 1858.**

R.B. Angus, Department of Biology, Royal Holloway and Bedford New College, Egham, Surrey TW20 0EX, U.K.

Abstract. The purpose of this application is to give precedence to the name *Helophorus brevipalpis* Bedel, 1881 for one of commonest water beetles in Europe, known also from the Pleistocene, over the senior subjective synonym *Helophorus crecitus* Kiesenwetter, 1858.

Case 2689 - ***Helophorus obscurellus*** **Poppius, 1907 (Insecta, Coeloptera): proposed precedence over *Helophorus fausti* Kuwert, 1887.**

R.B. Angus, Department of Biology, Royal Holloway and Bedford New College, Egham, Surrey TW20 0EX, U.K.

Abstract. The purpose of this application is to give precedence to the name *Helophorus obscurellus* Poppius, 1907 for a beetle with a wide distribution in the Palearctic, and known from the Pleistocene over the senior subjective synonym *Helophorus fausti* Kuwert, 1887.

Case 2716 - ***Ceratopogon puncticollis*** **Becker, 1903 (currently *Culicoides puncticollis* ; Insecta, Diptera): proposed precedence over *Ceratopogon algecirensis* Strobl, 1900**

J. Boorman, Department of Entomology, British Museum (Natural History), London SW7 5BD, U.K.

Abstract. The purpose of this application is to give precedence to the specific name *Ceratopogon puncticollis* Becker, 1903 of a biting midge over the senior synonym *Ceratopogon algecirensis* Strobl, 1900

The following Opinions were published on 23 June 1989 in Vol. 46, Part 1 of the *Bulletin of Zoological Nomenclature.*

Opinion 1543 *Dytiscus cinereus* Linnaeus, 1757 (currently *Graphoderus cinereus,* Insecta, Coleoptera): neotype replaced

Opinion 1544 Ethmiidae Busck, 1909 (Insecta, Lepidoptera): given precedence over Azinidae Walsingham, 1906

Opinion 1545 *Galbellula* Bezzi, 1909 (Insecta, Diptera): *Platygaster arcticus* Zetterstedt, 1838 designated as the type species.

Opinion 1546 *Chelonus* Panzer, 1806 (Insecta, Hymenoptera) and Anomala Samouelle, 1819 (Insecta, Coleoptera): names conserved.

The following Opinions were published on 29 September 1989 in Vol. 46, Part 3 of the *Bulletin of Zoological Nomenclature.*

Opinion 1555 *Parasigara* Poisson, 1957 (Insecta, Heteroptera): *Corisa transversa* Fieber, 1848 confirmed as the type species

Opinion 1556 *Dytiscus ater* De Geer, 1774 (currently *Ilybius ater*) and *Dytiscus planus* Fabricius, 1781 (currently *Hydroporus planus* ; Insecta, Coleoptera): specific names conserved

Opinion 1557 *Elachista* Treitschke, 1833 (Insecta, Lepidoptera): conserved, and *E. bifasciella* Treitschke, 1833 confirmed as the type species

Opinion 1558 *Dacus parallelus* Weidemann, 1830 (currently *Anastrepha parallela*: Insecta, Lepidoptera): lectotype replaced

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International Commission on Zoological Nomenclature

Call for new members of the International Commission on Zoological Nomenclature

The following members of the Commission reach the end of their terms of service at the close of the XXIV General Assembly of the International Union of Biological Sciences to the held in Amsterdam in July, 1991: Dr. H.G. Cogger (Australia, Herpetology); Prof. Dr. O. Kraus (Fed. Rep. Germany, Arachnology); Dr. M. Mroczkowski (Poland, Coleoptera); Dr. W.D.L. Ride (Australia, Mammalia). A further vacancy arises from the resignation of Dr. G.C. Gruchy (Canada, Ichthyology).

The addresses and specialist fields of the present members of the Commission may be found in the *Bulletin of Zoological Nomenclature* 46(1)(March, 1989). Under Article 3b of the Commision's Consitution, a member whose term of service has terminated is not eligible for immediate re-election unless the Council of the Commisson has decided to the contrary.

The Commission now invites nominations, by any person or institution, of candidates for membership. Article 2b of the Constitution prescribes that:

"The members of the Commission shall be eminent scientists, irrespective of nationality, with a distinguished record in any branch of zoology, who are known to have an interest in zoological nomenclature." (It should be noted that 'zoology' here includes the applied biological sciences (medicine, agriculture, etc.) which use zoological names.)

Nominations made since September, 1987 will be reconsidered automatically and need not be repeated. Additional nominations, giving the date of birth, nationality and qualifications (by the criteria mentioned above) of each candidate should be sent by 15 June 1990 to :

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

Orthopterists' Society

The 5th International Meeting of the Orthopterists' Society was held in Valsain, Spain, 17 - 21 July 1989. It was a very successful meeting with representation from all continents. The Valsain facility, a centre for ecological education, was provided free of charge by the Spanish government. Those attending were housed in hotels in the nearby picturesque city of Segovia. Connecting bus service was also free.

In addition to symposia and submitted papers, plans were finalized for a training program in which FAO-selected candidates will be brought to North American centres in 1990 for training in all aspects of locust and grasshopper problems. This project will be funded by the FAO, Rome.

A contract has been negotiated with the Canadian International Development Agency for publication of the Orthopterists' Society series of Field Guides to the most serious locust and grasshopper pest species of the world. Publication will begin in early 1990. Dr. V. R. Vickery, Past-President of the Society, is coordinating, editing and arranging for printing of the series. The 'Guides' have been written by experts world-wide.

PUBLICATIONS

Book Reviews

Berryman, A.A.(ed.). 1988. *Dynamics of forest insect populations: patterns, causes, implications.* Plenum Press. New York & London. xx + 603 pp. $(US)97.50.

This book is a collection of 27 independent papers by 44 contributors: 13 papers from North America, 9 from Europe and the Soviet Union, 3 from Asia and 2 from Australia and New Zealand. Species involved are: 2 Diptera (cone- and gall-insects), 5 Homoptera (scales, aphids, etc.), 11 Lepidoptera (mostly defoliators), 2 Hymenoptera (sawfly and wood wasp) and 7 Coleoptera (mostly bark beetles), of which 22 species are pests of coniferous forests.

Each chapter deals with one species in a standardized format: (1) a description of the origin and geographical distribution of the species as a forest pest and the type of damage it causes; (2) the biology and life history in relation to environmental (site) conditions, e.g. soil and climatic types; (3) mortality factors, including major natural enemies, e.g. parasties, predators, pathogens; (4) interactions with a host tree, including the influence of physiological (nutritional) state of the host on the development of the pest or the host's defensive action against the pest; (5) observed pattern of population dynamics - outbreak processes; (6) outline or comparison of existing explanations or hypotheses of the initiation and termination of an outbreak; (7) management implications and strategies.

Most chapters provide a comprehensive overview of the problem caused by the pest species concerned - ecological and socio-economic impact - outline their biology and life history quite well. Most chapters also provide an updated bibliography. From this point of view, the book can be used as teaching material - case studies - for undergraduate students in forest insect epidemiology.

It is quite a disappointment, however, that the central theme of the book, population dynamics, is rather weak. In many studies, the observations are not sufficiently long for a meaningful quantitative analysis; inferences of underlying mechanisms are often too intuitive and uncritical. An exception is the systematic, long-term study on larch budmoth in the Swiss Alps, even if some of its conclusions are debatable.

It is important to use this book carefully; if used as teaching material, the instructor should warn the students not to swallow what is said about population dynamics. I think the book is really mistitled; something like "an outline of forest insect epidemiology" would have been more appropriate. For a whopping $(US)97.50 per copy, it is out of reach for most individuals. A library copy would serve the purpose.

T. Royama,
Forestry Canada - Maritimes Region
Fredericton, N.B.

Delvare, G. et H.-P. Aberlenc. 1989. *Les insectes d'Afrique et d'Amérique tropicale - clés pour la reconnaissance des familles.* CIRAD/PRIFAS, Montpellier, France. 302 pp. FF 275.00.

J'avais hâte de feuilleter ce merveilleux petit ouvrage dont un collègue m'avait dit beaucoup de bien car "il n'existait guère d'ouvrages récents en langue française permettant au débutant de reconnaître, à l'aide de clés dichotomiques, les principales familles d'insectes des régions tropicales" selon les mots mêmes des auteurs. Ces derniers ont réussi de façon magistrale à relever le défi de combler cette lacune.

La première partie du guide brosse une vue générale des caractères généraux, de l'anatomie et du développement des insectes: une très belle synthèse que même l'entomologiste averti pourra toujours consulter, histoire de rafraîchir ses connaissances. J'en dirais autant du chapitre sur la morphologie des insectes que les auteurs ont traité succinctement en évitant le piège classique de vouloir tout dire. Ils se sont volontairement limités aux notions fondamentales sans abuser des termes spécialisés et des nombreux cas spéciaux possibles: un très bon compte rendu quoi, le tout accompagné d'illustrations de très grand qualité.

Le troisième chapitre sur la classificaiton et l'identification n'apprendra rien de neuf aux entomologistes de métier mais sera d'un grand secours aux débutants et démystifiera les concepts de l'espèce, la classification linnéenne, les grandes régions zoogéographiques, etc. Au chapitre suivant on discute de l'arbre phylogénétique des insectes; suit une clé d'identification des ordres des Hexapodes. L'utilisateur sera heureux de constater que beaucoup de caractères mentionnés dans cette clé et dans les autres qui suivront, sont indiqués par des flèches sur les illustrations, ce qui permet un repérage rapide.

Les chapitres suivants sont consacrés aux différents ordres traités dans l'ouvrage. Ils commencent d'abord par une courte présentation de la morphologie de l'adulte et une discussion de la classification de l'ordre. Vient ensuite une clé d'identification des principales familles. Les grands ordres sont également déployés en tableaux ou les subdivisions vont jusqu'aux sous-familles. Ces tableaux permettent de visualiser d'un seul coup d'oeil l'importance relative des familles et leur diversité a l'intérieur d'un ordre particulier. Chaque chapitre se termine par des références sélectionnées et regroupées sous différentes rubriques. Commes les auteurs le mentionnent dans l'introduction ils se sont limités aux ouvrages les plus significatifs. Je diverge parfois d'opinion entre leur choix et mes préférences mais je dois avouer que mes opinions recèlent également une bonne part de subjectivité. Toutefois, le lecteur peut être assuré d'y retrouver toute la littérature importante.

Le guide s'achève par un glossaire des principaux termes d'entomologie avec de nombreuses références aux illustrations et un index des noms des genres et des taxa supragénériques utilisés dans le texte.

Le titre de ce petit guide est un peu trompeur car il prétend ne s'intéresser qu'aux insectes d'Afrique et d'Amérique tropicale. En fait, son utilisation peut s'étendre tout aussi bien à l'Amérique du Nord qu'à l'Europe car la plupart des familles traitées sonts cosmopolites. Tout entomologiste y trouvera donc son compte.

Bravo aux auteurs de cet excellent ouvrage! Je le recommande aux débutants comme aux entomologistes avertis, aux amateurs aussi bien qu'aux professionnels.

L.E.Sage,
Centre de recherche biosystématique,
Ottawa, Ont.

Scholtz, C.H. and E. Holm (eds). 1985. *Insects of Southern Africa.* Butterworth Publishers, Durban. 502 pp, + 12 colour plates. Hard cover $(US)70.00. (Available from Butterworth (Publishers) Inc., 80 Montvale Ave., Stoneham, Ma. U.S.A. 01280)

This impressive work is the first comprehensive treatment of the diverse insect life found in southern Africa, an area that includes Namibia, Botswana, Zimbabwe, southern Mozambique and South Africa and the states that lie within its borders. With contributions from a distinguished list of 48 specialists, it is a richly illustrated volume that provides keys to the families (or subfamilies) and a wealth of information on the diversity and biology of this part of the African fauna.

The book begins with a condensed summary (24 pp.) of the general morphology, metamorpho-

sis and higher classification of insects that should give those without previous entomological experience the background necessary to use the rest of the book. Each of the 26 following chapters deals with a single order arranged systematically from Archeognatha to Hymenoptera. Chapters open with a general account of the group and include helpful drawings to explain specialized terms. This is followed by a series of identification keys that work down to the family (or subfamily) level interspersed with text on the diagnostic features, biology, diversity and important references for the different groups. The volume concludes with a combined reference section of 1042 entries, a short glossary and 2 indices (general and systematic).

The book (29 x 21 cm) is well constructed, has a good layout and makes effective use of graphics such as bold fonts to delineate subfamily and higher level taxa. The text is remarkably free of typographical errors (only a few were noted) but the occasional inconsistency in nomenclature such as the use of Acanthoceridae (pp. 23 and 214) for Ceratocanthidae (pp. 215 and 217) may prove confusing for some readers. The keys are concise and well illustrated which greatly facilitates their use by non-specialists but they are not meant to be exhaustive and so difficulties and be expected when attempting to identify unusual or atypical taxa (e.g. - trying to place the scydmaenid *Mastigus transvalensis* (Fig. 20.66) using the key to polyphagan superfamilies).

The 96 black and white and 12 coloured plates are nicely integrated throughout the book. In place of standard scale bars though, the editors have chosen to use a flea silhouette of varying size to indicate magnification on the black and white plates. While this method is visually effective with illustrations near lifesize, at higher magnifications the "flea" becomes obtrusive and space consuming, especially when it assumes the alarming proportions as on page 179. A scale bar would have been more appropriate. The coloured plates (no fleas here) are a nice addition and highlight a few of the more showy species found within the region. While the quality of these plates is somewhat uneven due to the diverse sources of the illustrations, the plate of the buprestids is notable for the excellence of its detailed illustrations, reflecting the interests and artistic ability of one of the editors.

Ostensibly, this is a reference work for entomology students at the University of Pretoria, but Scholtz and Holm have done an admirable job and the volume should find a welcome spot on the reference shelves of systematists, ecologists and field biologists with an interest in the insect fauna of Africa and of southern continents in general.

Bruce Gill,
National Museum of Natural Sciences,
Ottawa, Ont.

Noyes, J.S. and E.W. Valentine. 1989. *Mymaridae (Insecta: Hymenoptera) - Introduction, and review of the genera.* (Fauna of New Zealand No. 17). DSIR Publishing, P.O. Box 9741, Wellington, New Zealand. 95 pp. 184 figs. Soft cover. $(NZ)24.95.

This 17th contribution of the Fauna of New Zealand series is the first comprehensive work on the family Mymaridae for any area of the Southern Hemisphere and one of the very few for the world. However, it goes only to the generic level.

The family Mymaridae is introduced and a diagnosis is included. This is followed by concise discussions on the higher classification within the family, faunal relationships, biology and life history, mymarids in biological control, collecing and preserving techniques and terms used in the text. A 94-couplet key to both sexes of the 42 genera known from New Zealand is given.

Taxonomic descriptions make up most of the work. These include twenty-two previously

described genera and 20 new ones of which three are not named formally because of lack of good material. The type species only of new, named genera are also described. Each generic description contains a diagnosis, comments on biology when known, remarks on related genera, important literature and the number of species described for the world and described or undescribed for New Zealand. Each description is illustrated with good line drawings (of the type species for the new genera), which are grouped alphabetically by genus at the end. A list of 105 references and appendix of host records completes the paper.

The text is well-written and organized, supported with sufficient good quality and accurate line drawings of the important structures needed to recognized a genus. The few genera I tried to determine keyed out correctly (from my own knowledge of the family).

The author wisely did not try to classify the genera into tribes or subfamilies because such a classification would still be so unstable and artificial in Mymaridae. However, he did propose an informal, possible more natural, grouping of genera based on several characters, including some not previously used. For practical purposes, he arranged the generic descriptions and illustrations alphabetically which made it very easy to find a particular one, something which I appreciated very much. The descriptions are very comparable among themselves. The previously known genera are described in sufficient detail for proper identification without being overly long, whereas descriptions of the new genera were much more detailed.

I found only one mistake that might cause some confusion, namely, there are many species in several genera of Mymaridae that are less than 0.4 mm long, not just some as indicated in the introduction. The lower size limit for members of the family should have been given as 0.2 mm.

This contribution is a sound foundation for further taxonomic work on the genera and species of the Australian-region Mymaridae. But anyone, both amateur and professional, working on the taxonomy of Mymaridae from any area of the world will need it, as it is the first to present in one well-illustrated volume the great diversity of mymarids that occur in the Australian region, including many genera that are world wide in distribution.

John Huber,
c/o Biosystematics Research Centre

Harris, M.K. and C.E. Rogers (eds.). 1988. *The entomology of indigenous and naturalized systems of agriculture*. Westview Press. Boulder (Colorado) and London. 238 pp. Soft cover. $(US)35.00.

This book derives from two Entomological Society of America symposia on "Crop Protection Entomology". Its stated purpose is to "highlight some agriculturally important plants and their associated arthropod complexes with a biological as well as an agricultural perspective... emphasizing how the wild plant interacted with arthropods prior to, as well as after, plant domestication and how this knowledge could be used to further progress in solving problems facing biology and agriculture."

The crops covered are sunflowers, crucifers, muscadine grapes, strawberries, rabbiteye blueberries, sorghum, corn (and Johnson grass), rice, wheat and pecan (in that order!). Although all of the authors are entomologists, they have made gallant efforts to review the botanical history of their representative crops. In several cases, however, much of the information included was not related, by the authors, to the topic under discussion.

Unfortunately, what is missing from this book is an introductory review paper covering the theoretical and practical aspects of the entomology of indigenous and naturalized systems of agriculture. This could have provided a useful framework and raised questions, allowing subsequent papers to

provide detailed illustrative examples, suggest answers to some of the questions and indicated profitable directions for future research. Without this, the book is to some extent a do-it-yourself kit requiring much effort on the part of the reader to derive and general principles or insights. This is regrettable as there is a great need for pest prevention and control strategies to evolve from the "efficient use of curative inputs and subsitution of more benign inputs" type of response to a "design and management" approach. This development will be heavily dependent on our understanding of the ecology of indigenous and naturalized agricultural systems. So, in this sense, the book misses an important opportunity.

Despite these criticisms, the book has much to offer. There are numerous useful tables summarizing crop characteristics and associated arthropods. The conversion of much of the written material in some of the papers into additional tables would have further strengthened the book.

The emphasis in many of the papers is on chemicals that confer resistance to certain pests. Much of the predator and parasite data reported is discouraging. It should be remembered, however, that most of these data were collected from environments in which little or no effort had been made to attract and support natural controls. Relatively little attention is paid to the potential of cultural methods of pest control. Roger's opening chapter on sunflowers is typical in this respect. It ends with the tantalizing statement that "much could be learned about ecologically sound management of insects on cultivated sunflower". Although Finch provides a useful review of the influence of cruciferous weeds and diversified crop habitats on the pest status of cabbage root fly, his conclusion that increasing diversification is unlikely to significantly reduce this pest problem seems premature. Dutcher *et al* provide a detailed review of the pests of muscadine grapes and Payne *et al* a more integrated review of the pests of rabbiteye blueberries. Shank's observation that although wild strawberry plants growing near commercial fields had no strawberry aphids, when they were "grown like commercial cultivars, they become heavily infested" should suggest some profitable lines of research in the area of environmental and physiological thresholds for pest attack. Teetes gets the "most interesting history" prize for his paper on the sorghum midge, but his material on implications for agriculture is disappointing. Gilstrap effectively uses his data on Banks grass mite on sorghum and corn to argue that, contrary to common opinion, biological control can be cost effective in annual crop systems, particularly if the pest has limited dispersal ability. Loevinsohn *et al* provide a useful description of the potential advantages of synchronous planting to increase the fallow period that pests must endure, although it is not clear to this reviewer why this is seen as an absolute alternative to enhancement of natural controls, for example by planting insectary plants along the bunds. Way's paper on wheat is a model of clarity and relevance. In the final paper, Harris effectively argues that because "the pest complex associated with the pecan in North America is comprised of arthropods that have coexisted with pecan for millenia ...", it is an ideal crop to understand how domestication affects insect association with plants. He goes on to show how, in this case, "masting" holds the key to understand the situation, and he concludes that "By carefully planning before an orchard is planted, varieties with desirable phenologies can be planted in separately treatable blocks that still allow wind pollination and pest monitoring systems to be implemented to ensure that insecticide use is minimized."

There is a useful author index and a subject index that is little more than an expanded table of contents. The book is so poorly bound that pages were falling out before I had finished reading it. Despite these criticisms, I would recommend the book as useful background reading in graduate pest management courses and it will be of particular interest to those concerned with increasing plant resistance to plants.

S.B. Hill,
Macdonald College,
Ste-Anne-de-Bellevue, Que.

Books Available

Marshall, J.A. and E.C.M. Haes. (no date). *Grasshoppers and allied insects of Great Britain and Ireland.* Hard cover. £25.00. Harley Books, Great Horkesley, Colchester, Essex CO6 4AH, England.

Askew, R.R. (no date). *The dragonflies of Europe.* Hard cover. £49.95. Harley Books, Great Horkesley, Colchester, Essex CO6 4AH, England.

Klosevych, S. 1989. *Principles and practice of microscopy and scientific photography.* Soft cover. $(Can)26.00. Microscopical Society of Canada. 150 College St., Toronto, Ont., Canada M5S 1A8.

A New Newsletter on Insects as Food

Real grasshopper pie, bogong for breakfast, ahuauhtle hors d'oevres, flies in your soup (shh, everyone will want one!).

For the devoted entomologists who like to consume their subjects, *The Food Insects Newsletter* is now available. The first issue (July, 1988) contains a description of what the *Newsletter* is about, its purpose and how it came about. The emphasis is on the practical side of edible insects for consumption by humans or domesticated animals. This issue describes the Food Insects Research and Development Project at the University of Wisconsin, reviews Julieta Ramos Elorduy de Conconi's fascinating book (in Spanish) on edible insects in Mexico, notes Jun Mitsuhashi's book (in Japanese) on edible insects of the world, contains clippings from the popular press and has snippets of other news.

To receive future issues, please send your name and address, with your area of interest to:

Dr. Gene R. DeFoliart,
The Food Insects Newsletter,
Department of Entomology,
545 Russell Laboratories,
University of Wisconsin,
Madison, Wisconsin
U.S.A. 53706

Peter G. Kevan,
University of Guelph

POSITIONS AVAILABLE / EMPLOIS DISPONIBLES

Memorial University of Newfoundland

Head
Department of Biology

Applications are sought for the position of Head, Department of Biology for September, 1990. The Department has 45 full-time faculty members and approximately 60 support staff and offers undergraduate programs to the Ph.D. level. Research and teaching are, at present, in four main focal areas: marine biology, evolution and ecology, parasitology/entomology and cell biology/microbiology.

Applicants should have demonstrated ability in research and be able to show leadership and administrative ability appropriate to the post. The applicant should have a broad appreciation of the biological field and be responsive to the diverse requirements of this multi-disciplinary Department.

Address applications (including names of at least three referees) or requests for further information to:

Dr. J.E. Strawbridge,
Associate Dean of Science (Chairman, Biology Headship Committee),
Memorial University of Newfoundland,
St. John's, Newfoundland A1B 3X7
(Bitnet: JSTRAWBR@MUN.CA,. Tel: (709-737-8155), FAX: (709-737-4000))

Applications should be received by January 15, 1990.

Memorial University encourages both men and women to apply for positions. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

Ataki Enterprises Inc.

We are an environmentally oriented manufacturing company that is developing natural, safe insecticides, insect traps and weed eliminators. We require the services of someone who is primarily involved with or has studied natural insect attractants and insecticides. For example, we need to know the efficiency of milk as an attractant for ants, cockroaches, earwigs, fleas, silverfish, crickets, millipedes, centipedes and carpet beetles.

We need someone to help us for several years and, in addition to pay for these services, will offer a 1% royalty on all profits. A Ph.D. is required. Please contact:

Sarah Murphy, President,
Ataki Enterprises Inc.
P.O. Box 1631, St-Laurent,
Montreal, Que.
H4L 4Z2
Tel. (514) 333-8078

Mount Allison University
Department of Biology

Applications are invited for two one-year appointments, subject to budgetary approval, commencing on July 1, 1990. The appointments will be at the rank of Assistant Professor. Applicants should hold a Ph.D. in Biology and be capable of teaching Introductory Animal Biology, Animal Physiology, Animal Development and selected fourth year courses in the candidate's field of expertise. Duties include undergraduate teaching and research. The 1990-91 salary range for this rank is $34,169 to 48,008. An application should include a curriculum vitae, a list of courses to which the candidate could contribute and the names of three referees and should be sent to:

Dr. Robert G. Thompson,
Head and Chair of Search Committee,
Department of Biology,
Mount Allison University,
Sackville, New Brunswick E0A 3C0

The closing date for receipt of applications is 1 February 1989. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. However, American citizens who apply will also be considered. Applications are encouraged from minority groups and both genders.

Camrose Lutheran College

Camrose Lutheran College is currently inviting applications for two tenure-track appointments in Biology, beginning 1 August 1990.

A Ph.D. degree is the minimum academic qualification. Any area of specialization will be considered but the successful candidate in each position must be able to teach undergraduate courses in at least two of the following: genetics, developmental biology, cell biology, microbiology, biochemistry and physiology.

Initial rank and salary will be set according to the qualifications and experience of the successful candidate. The postions will remain open until suitable appointments can be made.

Applications should be submitted as soon as possible to:

Dr. C.L. Olsen, Academic Dean,
Camrose Lutheran College,
Camrose, Alberta
T4V 2R3

In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

University of Toronto
Faculty of Forestry

Program Director (Research Associate)

Applications are invited for the position of Research Associate in Urban Entomology to direct an ongoing research program at the Faculty of Forestry, University of Toronto. The program focusses on the development of alternatives to conventional insecticide treatments and represents an opportunity for innovative research on behavioural, biochemically-based or biological control methodologies and preventative techniques.

The appointment is contractually limited to 5 years with options for renewal. Applicants should possess a Ph.D. and have a strong research background in structural and/or social pests, with specialization in insect physiology/biochemistry, behaviour or ecology. Good communication skills and the ability to work cooperatively with sponsors and the pest control industry are important.

The Faculty, located in the new Earth Sciences Centre with the Departments of Botany and Geology, has a strong research program in pest management, with established Urban Entomology facilities and support staff.

Salary will be commensurate with qualifications and experience. Proposed appointment date is 1 February 1990, or as soon as possible thereafter. Both men and women are encouraged to apply for the position. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

Individuals should submit their curriculum vitae and other relevant information. Three referees who are acquainted with the applicant's work should forward letters of reference. The deadline for receipt of applications is 5 January 1990.All documents should be submitted to:

Dean J.R. Carrow,
Faculty of Forestry,
University of Toronto,
Toronto, Ontario
Canada M5S 1A1

Graduate Studies Opportunities
Department of Entomology, University of Alberta
Edmonton, Alberta T6G 2E3

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

Behavioural hydrodynamics of aquatic insects. (D. A. Craig)
Effects of mosquito attack on cattle. (R. H. Gooding, jointly with M. Makarechian of Animal Science)
Genetics of hybrid sterility in tsetse flies. (R. H. Gooding)
Mechanics of sperm transfer and utilization in thrips and semiaquatic bugs. (B. S. Heming)
Population biology of insects feeding on aspen or their natural enemies. (J. R. Spence)
Relationships between feeding behaviour and electrophysiological responses of taste sensilla of the Colorado Potato Beetle. (B. K. Mitchell)

SCHOLARSHIPS AND GRANTS / BOURSES D'ÉTUDES ET SUBVENTIONS

Entomological Society of Canada
Postgraduate Awards 1990

Invitation for Applications

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

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

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

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

Regulations

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

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

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

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

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

La Société d'entomologie du Canada
Bourses pour Étudiants Post-Gradués 1990

Avis

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

Éigibilité - Les candidats doivent être canadiens ou residents 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 le15 juin 1989 et le 31 décembre 1990, et effectuer leur étude et recherche dans une université candienne. 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 supérieurs, et ce avec tous les privélèges rattachés au statut d'étudiant gradué. Un étudiant qui n'a pu être admis à une École des Gradués, on qui s'inscrit en vue de complèter 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 demands devront être reçues par le Secrétaire de la Société au plus tard le **15 juin 1990**.

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 1990.

Règlements

Autres sources de revenus - Un boursier pourra normalement donner des séances de cours ou des démonstrations et être auxillaire derecherche 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 rémuneration. Il peut cependant jouir d'une autre bourse ou d'un prix.

Transferts - Les bourses sont accordée 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, outransférer dans une université hors du Canada peuvent se voir retirer leur bourse. Après acceptation de la bourse, tout changement de programme d'études, de department ou université devra recevoir a préalable l'approprobation 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 aucune cas la Société n'accordera de montant supplémentaire. Des frais additionelles pour, par example, 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,
Newfoundland Forestry Centre,
P.O. Box 6028,
St. John's, Nfld. A1C 5X8

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 their 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, clearing 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 1990.**

The committee will evaluate all applications by 30 April 1990 and determine if, and to whom, grants will be awarded. The successful applicants will be informed immediately, thereby providing sufficent 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 Gradués

Appels pour Allocations

Préambule

Afin de promouvoir les études graduées 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 gradués d'élargir les horizons de leur formation. Les bourses, d'une valeur maximale de $2,000 permettront à des étudiants de realiser un project de recherche, ou de suivre des cours pertinents à leur sujet de thèse qui ne pourraient pas être entrepris dans leur propre institution.

Eligibilité

Afin d'être éligible, l'étudiant doit:

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

Format du Formulaire de Demande

Le formulaire d'application sera dans le style d'une demande d'octroi et l'étudiant devra fournir l'information suivante:

1) le suject de la thèse
2) une revue 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) le pertinence vis-à-vis les objectifs généraux de la thèse, b) les raisons pour lesquelles ce travail ne peut être en trepris à l'université où l'étudiant est inscrit, et 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 à la quelle la bourse sera requis.

L'application devra aussi être accompagnée de:

1) un C.V. complet mis-à-jour
2) une lettre de recommendation du directeur de thèse, et
3) Lorsqu'appropriée, une lettre d'appui d'un administrateur de l'institution où le candidat désire aller.

Evaluation

La valeur scientifique de chaque application 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 resortir les aspects positifs et négatifs de l'application, sera retourné à chaque candidat.

Echéances et Procédures

Les formulaires d'application, qui peuvent être obtenus du Secrétaire de la Société, doivent etre remplis et retournés pour le **15 februar 1990** au Secrétaire de la Société.

Le comité évaluera toutes les applications pour le 30 avril 1990 et déterminera si, et à qui, les bourses seront decernées. Les candidats choisis seront informés 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 son octroi.

Les récipiendaires devront preparer 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.

Arctic Institute of North America

Jennifer Robinson Memorial Scholarship

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

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

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

Lorraine Allison Scholarship

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

1) academic excellence
2) a demonstrated commitment to northern Canadian research
3) desire for research results to be beneficial to northerners, especially native northerners.

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

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

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

Applications for both these scholarships should be addressed to:

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

Smithsonian Research Fellowships in History, Art and Science

The Smithsonian Institution announces its Research Fellowships for 1990 - 91 in History, Art and Science. 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 biological sciences (animal behaviour and pathology, ecology, environmental studies, evolutionary biology, marine biology, natural history, paleobiology, systematics and tropical biology) may be made.

Applications are due 15 January 1990. Stipends supporting these awards are: $25,000 per year plus allowances for senior postdoctoral fellows; $20,000 per year plus allowances for postdoctoral fellows; $12,500 per year plus allowances for predoctoral fellows; $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 one year.

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,
7300 L'Enfant Plaza,
Washington, D.C.
U.S.A. 20560

Please indicate the particular area in which you propose to conduct research and give the dates of degrees received or expected.

UPCOMING MEETINGS / RÉUNIONS À VENIR

Fourteenth Annual Eastern Spruce Budworm Research Work Conference, 23 - 25 January 1990.
CONTACT: Mr. N. Carter, Dept. of Natural Resources, P.O. Box 6000, Fredericton, N.B. Canada. E3B 5H1

New York Natural History Conference, 20 - 22 June 1990, Albany, New York.
CONTACT: The New York Natural History Conference, Rm. 3140 C.E.C., Biological Survey, New York State Museum, Albany, N.Y., U.S.A. 12230

Forty Second International Symposium on Crop Protection, 8 May 1990, Ghent, Belgium
CONTACT: Dr. ir. D. Degheele, Faculty of Agricultural Sciences, Coupure links 653, B-9000 Ghent, Belgium

Australian Entomological Society, Twenty First General Meeting and Scientific Conference, 30 June - 5 July 1990, Canberra, A.C.T.
CONTACT: Dr. Jane Wright, CSIRO Division of Entomology, GPO Box 1700, Canberra, A.C.T. 2601, Australia

Fourth International Congress of Systematic and Evolutionary Biology, 1 - 7 July 1990, University of Maryland, College Park, Md., U.S.A.
CONTACT: Congress Secretariat ICSEB IV, Microbiology Building, University of Maryland, College Park, Md., U.S.A. 20742

Troisiéme Conference Internationale des Entomologistes d' Expression Française, 9 - 14 juillet 1990, Gembloux, Belgium.
CONTACT: M. C. Verstraeten, Zoologie générale et appliqué, Faculté des Sciences agronomique de l'Etat, B-5800 Gembloux, Belgique

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International Congresses of Dipterology

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

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

Workshop of Biological Pest Control in Canada

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

Name_____

Address_____

_____

_____

_____

Telephone (___)_____

Speciality _____

_____ Please send further information

_____ I expect to attend the workshop

_____ I expect to present a poster

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

MISCELLANEA / DIVERS

Black Widow Stars on Television

A fully mature female of *Latrodectus mactans* (F.) made its appearance on the CBC 6 o'clock television (Sept. 26, 1989) in Montreal. It was treated with respect by the camera crew, who did not remove it from its plastic container, but the bright red hour-glass marking on the ventral side was clearly visible.

There is nothing particularly unusual about the occurrence of black widow spiders in much of North America, but the species does not seem to be native to Quebec so its discovery was not particularly welcome. It was found in a bowl of red California grapes in a house in Beaconsfield (west end of Montreal Island) by Mrs. J. Hogan and her daughter. It was deftly captured and kept alive with commenable sangfroid - it seems that at least some of the public are becoming educated at last. It appears that the specimen had come in a refrigerated car to the Montreal area.

We are not aware of another record of a black widow spider from Quebec, though there may have been others in the past. The local residents are not keen on the idea of acquiring them and the local store manager felt himself obliged to discard his entire grape stocks!

Black widows are seldom aggressive but there is always a chance of a fatality resulting from an encounter with young children. The intruder was kept alive for some time at the Lyman Entomological Museum where it is now preserved.

D. K. McE. Kevan

Editor's Notes

Whew - Done! This issue of the *Bulletin* must be one of the longest on record - given the Society business and number of other items. Issues of this size are getting to be an increasing problem. The problem is simply the time required to get all the copy computerized and set up (I did the typing for all but 10 pages of this issue). For this reason, I would ask (plead, beg, etc.) that those who have the capability of sending material on Macintosh-compatible disks do so. A hearty thank you to Charles Vincent, Jeremy McNeil, Ron Gooding and John Spence for doing it for this issue.

There has been another major electronic innovation to do with *Bulletin* business. My department has purchased a FAX machine. **My FAX number is 506-364-2505.**

You should also notice that the deadline for submission of material to the *Bulletin* has been reduced, largely through the time savings brought about by using camera ready copy. Deadlines are now one month before the date of issue instead of six weeks. As noted in my annual report in this issue, this will mean very strict adherence to the deadline.

Finally, I usually don't have too much good to say about the Canadian postal system but this time they really came through. I actually received a letter addressed to "Dr. R. Aiken, Department of Biology, Mount Ellephant University, Sack Road, Ville, N.B. E0A 3C0". Now I don't want to cast aspersions or name names but the UBC Zoology Department might think about revising its mailing list.

And a final thank you to Jeremy McNeil and his crew for cleaning up the French in this issue.

Ron Aiken

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 Entomological Society of Canada, 1320 Carling Ave., Ottawa, Ont. K1Z 7K9. / Pour tout renseignement sur l'abonnement ou les numéros passés, prière de s'adresser à la Société d'entomologie du Canada, 1320 Ave. Carling, Ottawa, Ont. K1Z 7K9

THE DEADLINE FOR THE NEXT ISSUE, VOL. 22(1), IS FEBRUARY 1, 1990

LA DATE LIMITE POUR RECEVOIR VOS CONTRIBUTIONS POUR LE PROCHAIN NUMERO (VOL. 22(1)) EST LE 1 FEBRUAR 1990

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