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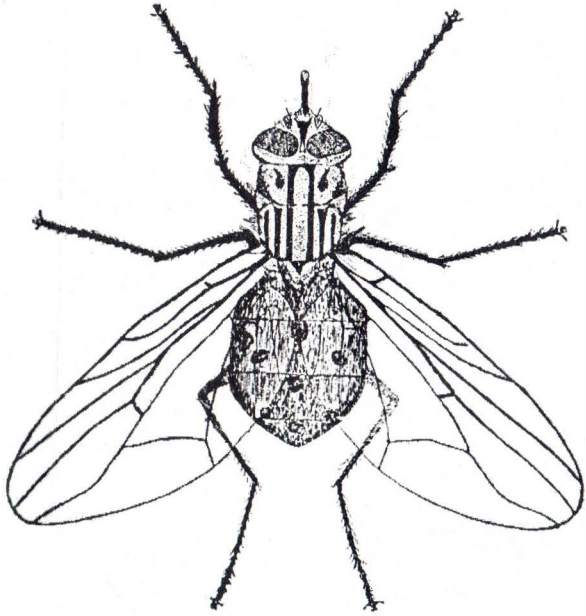
BULLETIN



ENTOMOLOGICAL SOCIETY OF CANADA

LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA

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BULLETIN

VOL 27(4) - December/ décembre, 1995

Contributions and correspondence regarding the *Bulletin* should be sent to the *Bulletin* Editor. Inquiries about subscriptions and back issues should be sent to the E.S.C. at: Faites parvenir vos contributions au *Bulletin* ou votre correspondance à l'Editeur du *Bulletin*. Pour renseignement sur l'abonnement ou les numéros passés, prière de s'adresser à la S.E.C.:

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

SOCIETY BUSINESS / AFFAIRES DE LA SOCIÉTÉ

NEW BULLETIN EDITOR

As of January 1996, the new *Bulletin* Editor will be:

Dr. Hugh J. Barclay
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Please send all correspondence concerning Book Reviews for the *Bulletin* to:

Dr. Al Ewen, Book Review Editor
Box 509, Dalmeny, Saskatchewan
S0K 1E0
Tel. (306) 254-4380

Notice of Executive Council Meeting

The mid-term meeting of the Executive Council will be held at the Entomological Society of Canada Office in Ottawa on 20 April 1996. Matters for consideration at this meeting should be sent to the Secretary at the following address:

Annonce de la réunion du Conseil Exécutif

La réunion de mi-session du Conseil Exécutif aura lieu au Siège social de la Société d'entomologie du Canada le 20 avril, 1996. Veuillez faire part au secrétaire de tout sujet pouvant faire l'objet de discussion de la réunion en communiquant de l'adresse suivante:

Dr. Peggy L. Dixon, Agriculture and Agri-Food Canada
P.O. Box 37, Mount Pearl, Newfoundland A1N 2C1
Fax 709-772-6064; Tel. 709-772-4763; email address: dixonp@nfrssj.agr.ca

The deadline for submissions to be included in the next issue (Vol. **28(1)**) is **February 1, 1996**

La date limite pour recevoir vos contributions pour le prochain numéro (Vol. **28(1)**) est le **1 februar 1996**

Call for Nominations - Second Vice President & Director-at-Large

Nominations for Second Vice President and Director-at-Large must be signed by three members in good standing and received by **30 April 1996** by the Secretary, Dr. Peggy Dixon (at the address given above).

Nominations pour Deuxième Vice Président et Directeur doivent être signée par trois membres de la Société et envoyée avant le **30 avril 1996** au secrétaire, Dr. Peggy Dixon.

Dr. Peggy L. Dixon
Agriculture and Agri-Food Canada
P.O. Box 37
Mount Pearl, Newfoundland A1N 2C1
Fax 709-772-6064
Tel. 709-772-4763
email address: dixonp@nfrssj.agr.ca

President's Address

presented at the ESC Annual General Meeting, Victoria, B.C.

I will now present a review of some important events, activities, achievements, and problems faced by the Society during the past year. I will not cover all activities of the various Committees and Trustees: their reports will be published in the *Bulletin*. All in all, this has been an eventful year.

Our Treasurer during the past 5 years, Bob Foottit, has indicated that he wanted to be replaced at the end of 1995. On behalf of the Society, I thank Bob for a job well done. The Treasurer's job is one of the toughest jobs and it is a key position in the Society. Bob has handled his many duties with care, efficiency, tact and foresight. I am pleased to report that Gary Gibson has agreed to serve as the next Treasurer of the Society.

Fiona Hunter, the *Bulletin* Editor of the Society for the past 5 years, has asked to be replaced by the end of 1995. On behalf of the Society, I thank Fiona for the high quality of the *Bulletin* that always appeared on time and her dedicated service to the Society. I am pleased to report that Hugh Barclay has agreed to serve as the next *Bulletin* Editor.

There has been some recent progress with regard to plans to hold a joint meeting with the Entomological Society of America in year 2000. This plan, originally suggested by ESA, was approved by the ESC Governing Board at the Annual Meeting in Sault Ste. Marie and was subsequently approved by ESA at their meeting in December, 1993. Four cities were considered as possible locations for the meeting: Toronto, Montreal, Chicago and Detroit. Site selection was to commence in 1995. Following these initial contacts, my efforts were unsuccessful to continue the dialogue on this matter until late summer of this year when Mr. Harry Bradley, ESA Executive Director, informed me that ESA was still very much interested in the joint meeting with ESC. I was informed that ESA favours holding the joint meeting in Canada and, in addition to the two Canadian cities listed earlier, Vancouver is also being considered as a possible meeting site. Mr. Bradley indicated that they will move quickly with the selection of the meeting site, a matter of great importance to ESC as it has a bearing on invitations from affiliates to host the Annual Meetings in 1998 and 1999. This is where matters stand now. At the initial stages in the site selection process, George Gerber will represent ESC on the site selection committee.

ESA President Dr Eldon Ortman contacted me during last April with the idea of ESA and ESC undertaking a joint project to develop a list of North American insect common names, with due consideration of the existing protocols and practice in the two countries. He recognized the Canadian practice of using common names in both official languages and suggested that there might be a need for development of a North American insect common names list in English, French and Spanish. It was suggested that this might be a project the two Societies could undertake as a contribution to the planned joint meeting in year 2000. The ESC Executive approved this proposal in principle at the mid-term meeting. I informed the ESA President accordingly. Subsequently, the ESA President and I instructed the Common Names Committee Chairs of our respective Societies to commence dialogue regarding the feasibility of this project.

With the approval of the final cover design changes for the Society journals, the Society publications will take on a new appearance in 1996. Copyright had been registered for the Society journals. On recommendation from the Scientific Editor, the Publication Committee agreed to establish a Forum section in *The Canadian Entomologist*. This new section will publish papers that discuss, re-evaluate and debate recently published work and methodology. Papers will be subject to the same peer review and page charges as other submissions. The Society purchased a computer system last year to implement electronic copy-editing and electronic mail in order to expedite communication with the Society Office, and to reduce publication costs. The electronic mail system is up and running as well as copy-editing of manuscripts submitted on diskettes. One of the concerns relating to Society publications is the decline in the number of manuscripts submitted to the *Memoirs* during the past two years. During 1995 no *Memoirs* will be published. Apart from the long term implications of this trend for the *Memoirs* series, there are serious implications on future subscriptions to the Society's journals.

The English and French editions of the book *Diseases and Insect Pests of Vegetable Crops in Canada* were published in July, 1994, and January, 1995, respectively. Both the English and French editions are selling reasonably well so far. As of early August, 1995, a grand total of 1706 books (1420 English and 286 French) had been sold. Although we need to sell about 4500 copies just to recover publication costs, based on the current record of steady sales, there is a reasonable chance of the Society recovering its investment, and it may even make a profit, in the not too distant future. The Marketing Committee is commended for continuing strong efforts in advertising and promoting this book. On the negative side, there are some lingering problems between ESC and CPS relating to handling of incomes and expenses associated with the sales and promotion of the *DPVCC* books. The auditors of the Society's books strongly recommend drawing up of a detailed agreement between ESC and CPS to document what costs are shared equally, how repayments back to the individual Societies are to be transacted, and who will report on this project's activities. Certainly, an agreement on fiscal responsibility between the two Societies must proceed any discussions on possible revision and/or reprinting of these publications. ESC is working hard to develop such an agreement.

Finances continue to remain a main concern to the Society. We finished 1994 with another financial deficit. However, our Treasurer reports that there is room for optimism: the deficits continue to be smaller each year due to the efforts of our Committees and members serving in other organizational functions. All major production bills have been paid on the *DPVCC* joint book project with the Phytopathological Society. During 1996, the Society should be able to reinvest some of the money spent on the book project.

I will now briefly comment on some activities in the Society to deal with current problems and to meet future challenges.

An in-depth review during the past year of membership and subscriptions to the ESC journals by the Membership and Publication Committees have shown clearly that both membership and subscriptions have been declining each year since the early 1980s, reflecting a decline in employment opportunities for entomologists and a continuing weak national economy. Current membership is about half of that in the early 1980s. At the same time the cost of operations increased markedly due to increases in the cost of production, distribution of publications, and operational costs associated with the run of society business.

This analysis indicated that the Society is appreciably smaller today than it once was, and will likely remain so in the foreseeable future. As the main sources of revenue for the Society come from membership and subscription fees, clearly a strategic review of the cost and scale of organizational matters were needed in order to maintain financial viability, scientific impact, and to remain a significant forum for the promotion of entomology. The ESC Executive Committee struck an *ad hoc* Strategic Review Committee in March, 1995, with the main objective to review Societal organization and operations, and to plan long term strategies for the Society. The main focus is on examination of those aspects of organizational structure and operations that traditionally involved significant costs to the Society. This task is being carried out in five subcommittees under the chairmanship of Rick West. These subcommittees submitted their interim reports to the first meeting of the Governing Board. The final reports are due at the next Annual Meeting. I strongly believe that this strategic review will point a way to a more focused, efficient and effective organizational and management structure for our Society.

Fiscal viability is but one of the requirements of a healthy Society. Another vital ingredient is relevance to the membership and society at large. Relevance is a difficult concept but for the membership it is a measure of the extent to which they find a "home" for their interests, activities and aspirations in the various functions of the Society. For the general public, relevance is a composite of several notions such as:

** The provision of public understanding and appreciation of the role of our science in benefiting society;

** The success with which we optimize scientific and technological benefit to the people and our natural resources.

It is the responsibility of the officers of our Society to point the way, and of each member to pitch in, to ensure that the Society continues to remain relevant to the needs of its members and the public at large.

In closing, I want to say that having served on the ESC Executive during the past three years gave me special appreciation for the long history and traditions of our Society, the impact of the Society on entomological scholarship and practice nationally and internationally, and of the talent and dedication to the cause of entomology of many of our members. I thank the members of the Executive Council, the Board of Governors, Committee members, Trustees and Headquarters staff for their support, hard work and contributions during my term as President. It has been an honour to serve. Thank you.

Les Safranyik
President, ESC

L'allocution du Président

Je vais maintenant présenter un bref résumé des plus importants événements, activités, réalisations et problèmes auxquels la Société a fait face au cours de la dernière année. Je ne parlerai pas des activités des différents comités et fiducies: leurs rapports seront publiés dans le Bulletin.

En tout et partout ce fut une année mouvementée.

Notre Trésorier des cinq dernières années, Bob Foottit, nous a fait savoir qu'il voulait être remplacé à la fin de 1995. Au nom de la Société, je remercie Bob du bon travail qu'il a accompli. La tâche de Trésorier est une des plus difficiles et c'est une position-clé au sein de la Société. Bob s'est acquitté de ses obligations avec soin, efficacité, tact et prévoyance. Je suis heureux de vous annoncer que Gary Gibson a accepté d'être le prochain Trésorier de la Société.

Fiona Hunter, la rédactrice en chef du Bulletin depuis les cinq dernières années, a demandé à être remplacée par la fin de 1995. Au nom de la Société, je remercie Fiona pour la qualité du Bulletin qui a toujours été publié en temps et de son dévouement envers la Société. Je suis ravi de vous annoncer que Hugh Barclay a bien voulu accepter le poste de rédacteur en chef du Bulletin.

Il y a eu des développements récents au sujet de la possibilité de tenir une réunion conjointe avec la Société d'entomologie des Etats-Unis en l'an 2000. Ce projet, initialement proposé par la SEEU, a été approuvé par le Bureau de Direction de la SEC lors de sa rencontre à Sault Ste Marie et subséquemment approuvé par le SEEU à leur réunion de Décembre, 1993. Quatre villes ont été retenues comme sites possibles de la réunion soit: Toronto, Montréal, Chicago et Détroit. Le choix de la ville-hôte devrait se faire en 1995. Suite à ces premiers contacts, tous mes efforts de poursuivre les discussions en cette matière ont été infructueux et ce n'est qu'à la fin de l'année que le directeur exécutif de la SEEU, M. Bradley, m' a informé qu'ils avaient toujours l'intention de tenir une réunion conjointe avec la SEC. On m'a indiqué que la SEEU préférait tenir la réunion au Canada et qu'en plus des deux villes canadiennes mentionnées plus tôt, Vancouver était aussi à considérer. M. Bradley m'a indiqué qu'ils procéderaient bientôt au choix de la ville, ce qui est très important pour la SEC car cette décision aura des retombées sur les invitations qui seront lancées par les filiales en vue de la tenue des réunions annuelles de 1988 et 1989. C'est là où nous en sommes dans ce dossier pour le moment. Pour ce qui est des premières étapes du processus de sélection de la ville-hôte, George Gerber représentera la SEC au sein du comité responsable.

Le Président de la SEEU, le Dr. Eldon Ortman, m'a contacté en avril dernier concernant la possibilité de réaliser conjointement un projet visant à élaborer une liste des noms communs d'insectes en Amérique du Nord qui tiendrait compte des pratiques et coutumes déjà existantes dans les deux pays. Il est au courant de notre habitude de nommer les noms communs d'insectes dans les deux langues officielles et suggère qu'il pourrait être utile d'avoir une liste de noms communs d'insectes de l'Amérique du Nord en Anglais, Français et Espagnol. Ce projet pourrait être la contribution des deux Sociétés à la réunion conjointe prévue en l'an 2000. L'exécutif de la SEC a, en principe, approuvé cette proposition lors de sa rencontre de mi-terme et j'ai fait part de cette décision au Président de la SEEU. Par la suite, le Président de la SEEU et moi-même avons informé les présidents des comités des noms communs de nos sociétés respectives pour qu'ils engagent des discussions sur la faisabilité d'un tel projet.

Suite à l'approbation des derniers changements apportés à la présentation de la page couverture des journeaux de la Société, les publications de la Société auront une nouvelle apparence en 1996. Les

droits de reproduction ont été enregistrés pour les journeaux de la Société. Sur la recommandation du rédacteur scientifique, le comité des Publications a accepté de créer une section Forum dans le Canadian Entomologist. Cette nouvelle section sera réservée aux articles qui discuteront ou réanalyseront des travaux ou des méthodologies scientifiques récemment publiés. Comme pour toute autre soumission, ces articles seront sujets au même processus de révision par les pairs et aux mêmes frais de page. L'année dernière, la Société a acheté un ordinateur pour permettre la rédaction et l'édition électronique des textes et l'utilisation du courrier électronique. Ceci devrait aussi améliorer la communication avec le siège social de la Société et réduire les frais de publication. Le courrier électronique a été installé et il fonctionne bien tout comme l'édition des manuscrits sur diskette. La SEC s'inquiète de la diminution du nombre de manuscrits soumis aux Memoirs au cours des deux dernières années. En 1995, aucun Memoir ne sera publié. Mises à part les conséquences que cette tendance aura à long-terme sur la série des Memoirs, il y a aussi de sérieuses craintes à l'égard des futurs abonnements aux journeaux de la Société.

Les versions anglaise et française du livre Maladies et Ravageurs des Cultures Légumières au Canada ont été publiées en Juillet, 1994 et Janvier, 1995, respectivement. Les deux versions se vendent raisonnablement bien. Déjà en début d'Août, un grand total de 1706 livres (1420 en anglais et 286 en français) avait été vendu. Même si nous devons vendre près de 4500 livres pour couvrir les frais de publications, les records actuels de vente indiquent qu'il y a de bonne chance que la Société recupère son investissement et qu'elle puisse même faire un profit dans un prochain avenir. Nous remercions grandement le comité chargé de la commercialisation du livre pour leurs efforts soutenus dans la publicité et la promotion du livre. En ce qui concerne le côté négatif de cette affaire, il y a toujours entre la SEC et CPS des problèmes concernant la façon avec laquelle les revenus et les dépenses liés à la vente et à la promotion des livres de DPVCC sont gérés. Les comptables de la Société recommandent vivement de préparer une entente entre la SEC et CPS décrivant les frais qui sont à partager à part égale, les règles à suivre pour rembourser les sociétés individuelles et la personne qui sera le rapporteur des activités de ce projet. Evidemment, une entente portant sur la responsabilité fiscale entre les deux sociétés devrait être prise avant d'envisager la possibilité de réviser et/ou de réimprimer ces publications. La SEC travaille très fort afin de mettre sur pied une telle entente.

La question des finances préoccupe toujours la Société. Nous avons terminé l'année 1994 avec un autre déficit budgétaire. Cependant notre Trésorier nous dit qu'il y a place à l'optimisme car la dette est de plus en plus petite à chaque année et ce, grâce aux efforts de nos comités et des membres qui oeuvrent dans d'autres activités de notre organisation. Tous les comptes importants concernant le livre produit conjointement avec la société Phytopathologique ont été payés. En 1996, la Société devrait être capable de réinvestir une partie de l'argent dépensée dans ce projet.

Je vais maintenant discuter brièvement des activités de la Société qui ont pour buts de régler des problèmes actuels ou de rencontrer de nouveaux défits.

Au cours de la dernière année, une révision complète de l'état des adhésions et des abonnements aux journeaux de la Société par le comité des Membres et des Publications a démontré que ces deux sources de revenus diminuaient à chaque année depuis 1980, ce qui reflète en quelque sorte la diminution du nombre d'emplois offerts aux entomologistes et la stabilité d'une économie nationale faible.

Le nombre actuel de membres dans la Société est environ la moitié de e qu'il était au début des années 1980. En même temps, les coûts de onctionnement ont augmenté de façon substantielle due à la hausse des coûts de production et de distribution des publications ainsi que du fonctionnement général de la Société. Cette analyse démontre que la Société est beaucoup plus petite aujourd'hui qu'elle ne l'a

été et il est fort peu probable qu'elle n'augmente dans les prochaines années. Comme les principales sources de revenu sont les frais d'adhésion et d'abonnement, il était nécessaire d'entreprendre une revue stratégique portant sur les coûts et l'ampleur de notre structure organisationnelle afin de maintenir la viabilité financière et l'impact scientifique de la Société et de demeurer une tribune importante pour la promotion de l'entomologie. En mars, 1995, le comité exécutif de la SEC a formé, dans le cadre de la revue stratégique, un comité ad hoc chargé d'évaluer la structure et le fonctionnement de la Société et de planifier des stratégies à long-terme. Il est important que nous réfléchissions sur ces aspects de structure et de fonctionnement qui sont normalement coûteux pour la Société. Cette tâche est présentement réalisée par cinq sous-comités sous la direction de Rick West. Ces sous-comités ont soumis leurs rapports intérimaires lors de la première rencontre du Bureau de Direction. Les rapports finaux doivent être déposés à la prochaine réunion annuelle. Je crois sincèrement que cette revue stratégique nous permettra de développer une structure et une gestion plus orientées, efficaces et représentatives de notre Société.

La viabilité fiscale n'est seulement qu'un des pré-requis nécessaires pour la santé d'une Société. Un autre élément essentiel est la pertinence du rôle tant des membres que de l'ensemble de la Société. La pertinence est un concept difficile à définir mais pour les membres c'est une façon de voir comment leurs intérêts, leurs activités et leurs aspirations se situent au sein des différentes fonctions de la Société. Pour le public en général, la pertinence est un ensemblede notions telles que:

Fournir aux gens une compréhension et une appréciation de notre rôle en tant qu'entomologistes.

Réussir à multiplier les bénéfices de la science et de la technologie au profit des gens et de nos resources naturelles. C'est la responsabilité des représentants de notre Société de nous indiquer le chemin à suivre et à chacun de nous de s'y engager afin d'assurer que la société demeure pertinente pour les besoins de ses membres et du public en général.

En terminant, je crois que le fait d'avoir servi sur l'Exécutif de la SEC au cours des trois dernières années m'a permis d'apprécier tout spécialement sa longue histoire et ses traditions, son influence au niveau de la formation et de la pratique de l'entomologie à l'échelle nationale et internationale ainsi que le talent et le dévouement de plusieurs de ses membres envers la cause de l'entomologie. Je remercie les membres du Conseil Exécutif, le Bureau des Gouverneurs, les membres des Comités, les fiduciaires et le personnel des Quartiers Généraux pour leur support, leur dur labeur et leur aide au cours de mon terme comme Président. Ce fut un honneur pour moi de servir la Société. Merci.

Les Safranyik
Président, SEC

Report of Elections Committee

The Committee met on Tuesday, 25 July, and consisted of R.W. Currie, T.D. Galloway (Chairperson) and S. Pernal. The successful candidates were:

Second Vice-President:	Hugh Danks
Directors-at-Large:	Sheila Fitzpatrick & Richard West
Fellowships Selection Committee:	Ed Becker & Sam Loschiavo
Honorary Member:	Ed Becker

T.D. Galloway
Winnipeg, Manitoba

Joint Meeting of the Acadian Entomological Society and the Entomological Society of Canada

5-9 October 1996 in Fredericton, New Brunswick
at the Lord Beaverbrook Hotel

The meeting will be held at the Lord Beaverbrook Hotel on the banks of the Saint John River in the heart of downtown Fredericton, close to several restaurants and shops.

Symposia being planned include *Tree Resistance to Insects* (Dan Quiring, Chair) and *Geostatistics in Pest Management* (Bruce Pendrel, Chair). Tentative workshops include *Nematodes in Insect Management* (Graham Thurston), *Ecology and Management of Colorado Potato Beetle* (Gilles Boiteau), *Population dynamics and Management of Hemlock Looper* (Rick West), and *Ecology and Management of Pollinators in Canada* (Kenna Mackenzie). Members with ideas for additional workshops may contact Graham Thurston.

Depending on interest, we will arrange for tours to King's Landing Historical Park - an 1800's New Brunswick working village, whale watching in the Bay of Fundy, and a scenic fall colours excursion. The city of Fredericton offers self-guided walking tours to local attractions as well.

Further updates and registration information on the joint meeting will be published in the upcoming issues of the ESC Bulletin.

For more information please contact:

Dr. Jon Sweeney, General Chair, ESC-AES Organizing Committee, Canadian Forest Service - Maritimes Region, P.O. Box 4000, Fredericton, N.B., E3B 5P7; Tel. (506) 452-3499; Fax. (506) 452-3525; E-mail: jsweeney@fcmr.forestry.ca

Dr. Graham Thurston, Chair, Scientific Committee, Canadian Forest Service, P.O. Box 4000, Fredericton, N.B., E3B 5P7; Tel. (506) 452-3026; Fax. (506) 452-3525; E-mail: gthurston@fcmr.forestry.ca

Call for Nominations - Honorary Membership

Nominations are invited for two Honorary Memberships in the Entomological Society of Canada. Honorary Members may be active members or former active members of the Society who have made outstanding contributions to the advancement of entomology.

Nominations must be signed by at least five active members of the Society and are then reviewed by the Membership Committee, who will select two names to be placed on the ballot. Nominations should include a brief biography of the candidate and a statement of her/his contributions to the advancement of entomology.

Nominations should be received by the Chair of the Membership Committee by **January 31 1996**. They should be sent in an envelope marked "Confidential" to the following address:

Dr. H.V. Danks, ESC Membership Committee,
Biological Survey of Canada (Terrestrial Arthropods),
P.O. Box 3443, Station D, Ottawa, Ontario, K1P 6P4
(Fax. 613-954-6439)

Call for Nominations - Fellows

Nominations are invited for Fellows in the Entomological Society of Canada. Fellows may be active or special members or entomologists who have made outstanding contributions to the advancement of entomology.

Nominations must be signed by four active members of the Society and are then reviewed by the Fellowship Selection committee. Names are submitted to the Executive Council for approval. A brief biography of the candidate and a statement of her/his contribution to entomology should be included in the nomination. Nominations should be received by the Committee by **31 January 1996.** They should be sent in an envelope marked "Confidential" to:

J.A. Shemanchuk, Agriculture and Agri-Food Canada, Research Centre, P.O. Box 3000 Main, Lethbridge, Alberta. T1J 4B1.

Student Affairs Committee Update

I want to thank Elizabeth Tomlin, past-chair of the Student Affairs Committee (S.A.C.), for her invaluable contribution to the Committee and Entomological Society of Canada (E.S.C.). Under her direction, the Committee has coordinated interesting and informative events at Annual Meetings that have been well received.

I have taken over the reigns of the S.A.C. and look forward to serving as the student representative on the Governing Board of the Society. I am enrolled in the Ph.D. program at Simon Fraser University in Burnaby, B.C., and am studying the natural enemies of grasshoppers in Alberta.

The S.A.C. coordinated the First Canadian Linnaean Games at the Annual meeting in Victoria. Judging by the response of the audience, the event was a success and a good time was had by all. All four teams in the Games were composed of students from Simon Fraser University. The results of the Games (and prizes awarded to each member) were as follows: First: "Jorge and his drones"; Maya Evenden, Jorge Macias-Samano, Mac McNair, Ian Robertson. Prizes: deluxe handlenses. Second: "Three maggots and a budworm"; Hersimer Johl, Lisa Poirier, Sherah Vanlaerhoven, Jasmine Wiles. Prizes: "Grasshopper Wheat Ale" t-shirts (donated by Big Rock Brewery, Calgary, AB). Third: "Beetlemania"; Rebecca Hallet, Dezene Huber, Therese Poland, Ian Wilson. Prizes: standard field handlenses. Fourth: "Exuvia"; Ed Basalyga, Suzie Blatt, Anne Savoie, Ed Vanranden. Prizes: standard field handlenses.

The S.A.C. is seeking one more person to be a member of the Committee. We have good representation from Western Canada and are looking for someone from the Maritimes or Eastern Canada. Note that Regular and Student Members can join the Committee. It's a good opportunity to become involved in guiding the direction of your Society, and advising Student Members on matters concerning them. Average time commitment is minimal (about 2 h/month). If you interested in becoming a member of the S.A.C., please contact me.

The coming year will be an important one in the history of the Society. The structure and nature of the E.S.C. are under review by the Strategic Review Committee, and a number of recommendations have been made. Some proposals directly affect the S.A.C., and I plan to keep students informed and

seek your input into these changes. I will review relevant recommendations in future issues of *Bulletin*.

Students wishing to receive a copy of the recommendations can contact me: Agriculture and Agri-Food Canada, Lethbridge Research Centre, P.O. Box 3000, Lethbridge, AB, T1J 4B1, Canada; internet danyk@abrsle.agr.ca; fax 403-382-3156; phone 403-327-4561.

Troy Danyk
Lethbridge, AB

Student Affairs Committee Report - 1995

The main activity of the committee this year was to organize the First Canadian Linnaean Games held at the Annual Meeting in Victoria. We had four teams preregister for this event, all from Simon Fraser University. I would like to acknowledge the contributions of a number of individuals who made this event possible. They are Jon Sweeny (MC), John Borden, Mark Winston and Bev Mitchell (judges), Richard Ring and John Borden (slides), Troy Danyk (question master and advisor), Al York (equipment and advice) and Peter Belton and the Centre for Pest Management, SFU (prizes). As was the case last year, we have had almost no feedback on the issue of board status for the student affairs representative. Only one student responded, asking for more information on the subject, and included the suggestion of having the board member not be the Chair of the student affairs committee.

Troy Danyk has been collecting job notices to put into the *Bulletin* on a continuous basis, and we published a transcript of last year's employment opportunities workshop in the *Bulletin* which we hope was useful. In the student paper competition in Victoria this year, the rule that the student should be the sole author of their paper was omitted, thus students could include their supervisor or others as co-authors if they wished. This was a concern last year, as many students felt that their work was more of a team than a solo effort.

This will be my last year as Chair of this committee, and I have recommended that Troy Danyk assume the job for next year, as he has made significant contributions to the committee for the last three years. My recommendation to the Board is that in the next year the committee focus on ways of encouraging student awareness of, and participation in, ESC activities.

Elizabeth Tomlin, Chair
Burnaby, B.C.

Treasurer's Report

The Society finished the year 1994 with another financial deficit. There is room for optimism, however. The deficits continue to get smaller each year! This is due to the continued efforts of our members, serving on committees and in other organizational functions, who have kept costs to a minimum.

The joint book project with the Canadian Phytopathological Society (*Diseases and Insect Pests of Vegetable Crops in Canada*) has reached the stage where all of the major production bills are paid. The book is selling well and will continue to do so with continued marketing efforts. In 1996 the Society

should be in a position to re-invest some of the money spent on the book project and see an increase in the all-important investment income from these investments.

Other segments of the Society's finances, including the Endowment and Scholarship funds, continue to be strong. The Headquarters operations are financially stable, particularly with our current renter income.

This is my last year as Treasurer. I would like to express my sincerest thanks to Sandy Devine for her tremendous efforts in making the Headquarters run smoothly. Also, many thanks to the members, trustees, and executives I have served under. There were some anxious moments, but never dull ones.

Bob Foottit
Ottawa, ON

Report of the Organizing Committee for the 1995 Joint AGM of the ESC and ESBC

The 1995 annual meeting was held in Victoria, B.C. October 14-18. It was a great success with just over 300 registered attendees. Although the large number of people created a few minor logistical problems, I think a great time was had by all. There were over 125 papers presented and 6 workshops as well as a number of associated meetings.

The meeting was financially successful and we were able to return all of the seed money to the national society.

I would like to thank the many people who helped to organize this meeting, and in particular the following:

Programme: Bernie Roitberg, Hannah Nadel, Bob Vernon, Rob Cannings, Ian Robertson, Ken Naumann, Robb Bennett
Local Arrangements: Lee Humble
Fundraising/Logo/Souvenirs: Robb Bennett
Printing: Peter and Elspeth Belton
Photography: Bill Riel
Registration: Therese Poland, Michelle Hall
Catering: Bev McEntire, Hannah Nadel
Treasurer: Jim Troubridge
Publicity/Linnaean Games: Elizabeth Tomlin
Alternate activities: Sheila Fitzpatrick
Student Paper Judging: Linda Gilkeson et al.

In addition I would like to thank the staffs at the Victoria Conference Centre, Harbour Towers and Chateau Victoria hotels and The Royal British Columbia Museum for their help and hospitality.

Next year's meeting will be at the Lord Beaverbrook Hotel in Fredericton NB October 5-9 and is being organized by Jon Sweeney.

Terry Shore
Chair, Organizing Committee

Report of the Scientific Editor 1995
Editing and Review for *The Canadian Entomologist*

The Editorial process and associated peer review aims to help authors of articles submitted to scientific journals make their messages succinct, clear, interesting, and of high quality. *The Canadian Entomologist*'s editorial board approaches its task with the positive view that all submissions have valuable information to convey. In my report, I want to explain the process and present some statistics on its outcomes.

A decade ago the editor of *Science* deliberated on the difficulty of making decisions about acceptance of articles for publication (Koshland, 1985; *Science* **227**(4684)). His essay described the process of selection. Having been the Scientific Editor of *The Canadian Entomologist* for nearly two years, I have had to ask myself how my role and decisions should be made.

I am fortunate to have an editorial board of Associate Editors who are dedicated, conscientious, and rigorous. Thus, as articles are submitted to our journal, they are categorized according to the interests and expertise of the Associate Editors. I send each manuscript to an appropriate Associate Editor, but try not to overburden any. Some manuscripts I retain myself for the next step in the process. The Associate Editor for the manuscript, or I, select two appropriately qualified reviewers from the international scientific community. Scientists, who find themselves volunteered as referees, are crucial to the review process. In the main, they are chosen based on their reputations as scientists and on their conscientiousness as colleagues. We aim to have a given manuscript back to the Associate Editor from the reviewers within a month of the latters' receiving it.

Such a speedy turn-around is rare. Sometimes, a reviewer fails to fulfil expectations. The failure may be complete lack of response, even after reminders and cajoling. Fortunately, that is rare and has happened about 8 times (ca. 5% of reviewers approached) in the past year. Far more common are well-intentioned reviewers who delay completion of their tasks for months. I estimate that about 30% of all papers are delayed that way. Absences and postal delays also explain some delays.

Once the Associate Editor has the submission back from the reviewers, he or she returns the file to me and provides a synopsis of the reviews and a recommendation. At this point, my role as Scientific Editor assumes its greatest importance. The manuscripts that are noted as acceptable with little or no revision required by both reviewers and the Associate Editor are marked "A" and returned to the author(s) for minor emendation. Those that are found to be unacceptable by the same group are marked "R" and returned to the authors with an explanatory letter of rejection. That letter may suggest re-submission of an entirely new manuscript.

Those submissions between "A" and "R" create problems. I have two categories: those for which acceptance can be provisionally granted (marked as "PA") and those for which re-review is required before a decision can be made (marked "RR"). Submissions marked "PA" and "RR" are the ones that take the longest in review (Table 1). I have read the reviewers' comments on these submissions and note that some agonize on the saving graces of the material presented. The Associate Editors often spend long hours on such manuscripts as well. It is not surprising that the review process takes an extra month.

It should be noted that a realistic time frame for turn around of manuscripts in the initial process of review must allow for postal deliveries from the author(s) to me, from me to the Associate Editors, from them to reviewers for action, back to the Associate Editors and finally back to me is 2.5 to 3.5 months

(similar to the average durations noted in Table 1 for submissions which are fairly easy to review). As noted above, some manuscripts become delayed in the review process for extraordinarily long times. To the authors of such manuscripts, apologies are conveyed.

TABLE 1. Summary of some statistics regarding the reviewing process for manuscripts submitted to *The Canadian Entomologist* in 1994 and 1995. The numbers of papers assigned to review outcomes A, PA, RR, and R (Acceptable with little or no change (A), Provisionally acceptable after major revision (PA), Requiring major revision, resubmission, and re-review before acceptance can be considered (RR), and Rejected (R)) are given with the percentages of submissions they represent. The mean and standard deviations of the "turn-around" time (from date of receipt to date I return to author(s)) are given, together with the ranges in parentheses.

Review		Number of Submissions	Percentage	Mean +/- S.D. and Range Outcome of "turn-around" time (months)
1994	A	34	(26%)	3.7 +/- 1.4; (1 - 6.5)
	PA	37	(28%)	4.8 +/- 1.7; (2.5 - 8)
	RR	43	(32%)	4.9 +/- 2.1; (2 - 10)
	R	17	(13%)	3.3 +/- 1.6; (2 - 6)
1995	A	13	(23%)	
	PA	15	(27%)	
	RR	19	(35%)	
	R	8	(15%)	

Following completion of review, and once a paper is pronounced acceptable, I spend some time on the nuts and bolts of editorial style, grammar, English usage, and the like. Sometimes, it is necessary to return manuscripts to authors once again for points of clarification. This year, I have had to send only 3 papers back to authors after acceptance. From my desk, the manuscripts are sent to our Technical Editor, Barbara Patterson, for final polishing according to the style of *The Canadian Entomologist*.

The whole process is lengthy and involved. Nevertheless, a well-prepared manuscript is normally published within 9 - 12 months of submission. This can be determined from dates provided at the end of each published paper. Very few papers are given priority status, and those that are are ones which are of high quality and have met with undue delays. The incidence of papers being submitted in their final draft on disc is rising slowly. My letters to authors now encourage this practice because the Technical Editor is now able to handle these. From the foregoing, it can be appreciated that submitting final drafts on disc does not speed the process of publication greatly. However, it does reduce error and facilitates the preparation of proofs.

The number of manuscripts received in 1995 to date is just over 100. This number is slightly less than that for the same time last year, by which 113 submissions had been received. The general decline in number of submissions this year has been pretty much uniform in each month. It probably indicates a decline in the number of professional entomologists in Canada and elsewhere.

Peter Kevan
Scientific Editor,
The Canadian Entomologist

Report of the Scientific Editor - *Memoirs*

Since April 1995 one manuscript has been submitted to the *Memoirs* for publication. This manuscript is in review at present. If accepted for publication, this manuscript will be published in 1996.

The two manuscripts submitted to the *Memoirs* in 1994 (reported on in my last two reports) were withdrawn by the authors while they were in the review process. The authors of both manuscripts were employees of Biological Resources Division, CLBRR, Agriculture and AgriFood Canada (AAFC), and they were forced to withdraw their manuscripts because of budgetary cutbacks in CLBRR. As a result, no Memoir will be published in 1995. I understand also that these budgetary cutbacks at AAFC are not just temporary, and worry about the long-term implications for the Memoir series. This is one of the issues being addressed by the subcommittee on the future of ESC publications chaired by Guy Boivin.

My thanks to the anonymous reviewers of these three manuscripts who have given so much of their time and expertise, and to Barbara Patterson and Sandy Devine for their cheerfulness and support.

Valerie Behan-Pelletier
Scientific Editor, *Memoirs*

Bulletin Editor - Annual Report, 1995

The *ESC Bulletin* is now being printed by Lowe-Martin Group (Ottawa). Unfortunately, the June and September issues of the *Bulletin* were delivered late to members ... but this was caused by my tardiness in submitting the camera-ready copy for printing, and not by Lowe-Martin. I apologize for any inconvenience this may have caused members.

The March issue (Vol 27 No. 1) was 64 pages long ... 24 pages longer than the same issue in 1994. This discrepancy is accounted for, in part, by the inclusion of five articles in the March 1995 issue. I thank Elizabeth Tomlin for sending the ESC/ESBC Meeting notices (including Registration forms, Abstract forms, etc.) as camera-ready copy. The June issue (Vol 27 No. 2) was 56 pages long (exactly the same length as in 1994). The Auditor's Report (pp. 71-82) was included as it was sent to me. (Thus, the different type face.) The ESC/ESBC meeting forms were reprinted in the June issue. The September issue (Vol 27 No. 3) was 32 pages long (8 pages shorter than in 1994). The final number of pages for Volume 27 is 228, close to last year's total which was 236.

I indicated at last year's Board Meeting that I would be stepping down as *Bulletin* Editor as of January 1st 1996. The call for a new *Bulletin* Editor was placed in both the December 1994 (Vol 26 No. 4 p. 148) and March 1995 (Vol 27 No. 1 p. 6) issues.

Vol 27 No. 4 will be my final issue as *Bulletin* Editor. I have enjoyed serving the Society as *Bulletin* Editor these past five years and hope that my successor finds it as rewarding as I did.

I extend my thanks to those of you who sent submissions on diskette, or via email. I encourage you to continue to do so! It makes the *Bulletin* Editor's job a little less hectic! To my anonymous source(s?) at Agriculture Canada ... please continue to leak tidbits of information to the new Editor. I apologize for not writing an Editorial about the forthcoming name change of CLBBR to the *Cereal Rape Centre* ... but I simply ran out of steam!

Fiona F. Hunter
Bulletin Editor

Marketing and Fund-Raising Committee (Ad Hoc Committee)

Annual Report, October 15, 1995
Members: K. Floate (Chair), J.D. Shorthouse, R. Westwood

At the mid-term Executive Council Meeting held April 22, 1995 in Ottawa, the Marketing Committee was asked to address three general items. These items and the Committee's response to each are as follows:

1) The Marketing Committee was asked to place a questionnaire in the Bulletin and on the computer bulletin board Entomo-L regarding the marketing of miscellaneous items promoting the Society, and the establishment of a 2x2 slide competition at annual meetings. This questionnaire has been submitted for inclusion in the Bulletin and has been posted to ENTOMO-L. A copy of this questionnaire is appended.

R. Westwood and J. Shorthouse each have volunteered to help establish an annual slide competition, if membership interest warrants.

2) The Marketing Committee was asked to submit a potential budget regarding the cost of marketable items. The committee has investigated the cost of selected items[1]. For example:

250 adult, 100% cotton, coloured t-shirts with a 3-colour logo ($8.80/shirt).....approx. $2,200
144 ceramic mugs with a custom, 2 colour logo ($3.50/mug).....approx. $500
200 ceramic mugs with insect photograph ($9.50/mug).....approx. $1,900
200 calendars with insect photographs ($15.00/calendar).....approx. $3,000

[1] These prices do not include GST or the cost of shipping the items from the manufacturer to the Society's Ottawa office. Additional costs may be associated with receiving orders, packaging and shipping merchandise from the Ottawa office to customers, and advertising the sale of these items.

The Committee foresees initial startup costs of approximately $3,000-$4,000, assuming only the first two items (and amounts indicated) are offered for sale. Further discussion on the sale of items through the Society is premature until responses to the marketing questionnaire have been received. This matter will be addressed further at the mid-term meeting in 1996.

Issues that need to be determined at this time are: 1) the feasibility of selling items by mail order through the Society's Ottawa office; e.g., are staff and storage available for this purpose?, and 2) the resolution of potential conflict between the Society's sale of items at annual meetings and the sale of similar items by the provincial societies hosting these meetings. *The Committee recommends that these issues be addressed by the Executive Council.*

3) The Marketing Committee was asked to resubmit draft objectives and duties to the Executive Council. These draft "Objectives and Duties" are provided below.

Marketing Committee - Objectives and Duties

The Committee understands its objectives to be the promotion and marketing of Society publications and additional items to increase awareness of the Society and to increase revenues to the Society. In accordance with these objectives, the committee undertakes the following duties:

i) to promote Society publications (e.g., the computer database "*Common Names of Insects in Canada*", the book "*Diseases and Pests of Vegetable Crops in Canada*", and the journals "*The Canadian Entomologist*" and "*Memoirs of the Entomological Society of Canada*").
ii) to promote/market miscellaneous items (e.g., shirts, mugs, calendars, note cards).
iii) to promote the sale of advertisements in the *Bulletin* of the Entomological Society of Canada.
iv) to promote membership in the Society.
v) to encourage corporate sponsorship of, and private donations to, the Society.

These duties will be undertaken in cooperation with the Membership Committee, the Publications Committee, the Finance Committee and other committees when appropriate.

Additional items:

Sales of "*Diseases and Pests of Vegetable Crops in Canada*". As of September 1, 1995, 1,706 copies either have been sold or ordered (hardcover English - 281; hardcover French - 154; softcover English 1,139; softcover French - 132). Copies of DPVCC have been sent out for review and announcement of the availability of this book has been posted on the computer bulletin boards ENTOMO-L and PESTCON-L. The Committee commends D.C. Eidt for his initiative in providing his personal copy of DPVCC for review by the gardening columnist of his local paper. The Committee encourages other Society members to do likewise.

"*Common Names of Insects in Canada*" database. The Committee reviewed a proposal that the Society's computer database "*Common Names of Insects in Canada*" be made available to the Centre for Agriculture and Biosciences International (CABI) for incorporation in their Arthropod Names Index. Because this action is unlikely to affect sales of the Society's database and because it would enhance the Society and promote entomology, the Committee recommended that "*Common Names of Insects in Canada*" be made available to CABI for this purpose. The Executive Council accepted this recommendation at the mid-term meeting.

Kevin Floate, Chair
Marketing Committee

Science Policy Committee Report

Une des principales activités de la société, en ce qui a trait aux politiques goouvernementales pouvant affecter l'entomologie, a été le travail du Dr. Steve Marshall sur les projets de loi traitant de la collection et de la conservation d'espèces d'insectes. Ces projets de loi, le Wildlife Trade Act et le Canadian Endangered Species Protection Act, pourraient nuire aux entomologistes travaillant en systématique si la législation est appliquée de facon restrictive et indiscriminée. Le détail de l'impact de ces projets de loi et des activités du Dr. Marshall est contenu dans le rapport du Comitésur les espèces menacées.

Les effets des coupures massives effectuées par le gouvernement fédéral en recherche commencent à peine à se faire sentir. Les centres de recherche en forestrie et en agriculture ont maintenant préparé leur plans de coupure et nous saurons dnas les mois qui viennent quels seront les domaines les plus touchés. Actuellement il est difficile d'estimer exactement quel est l'impact des coupures en entomologie.

Au niveau du fonctionnement du Comité des Politiques Scientifiques, la nomination automatique du Premier Vice-Président comme président de ce comité implique que la présidence change à chaque année. Je crois qu'il serait préférable que ce comité puisse bénéficier d'un présidnet qui reste en poste au moins trois ans. De cette facon des politiques plus suivies seraient possible. Ce point pourrait être discuté lors de notre réunion du conseil d'administration.

Guy Boivin
Président, Comité des Politiques Scientifiques

Report on the Workshop "Molecular Evolution and Systematics of Insects"

Held at the Joint Meeting of the Entomological Society of Canada and the Entomological Society of British Columbia, October 17, 1995, Victoria, B.C.

This is a brief report on the discussion that was held at the Molecular Evolution and Systematics Workshop. While the attendance was small (see list of participants), the workshop was a great success. The following is a summary of the projects and problems presented by the participants.

PROJECTS AND QUESTIONS

1) Dr. Bob Foottit (Agriculture and Agri-Food Canada) gave an overview of the systematic problems he faces with the Aphididae. There are many unanswered questions about the major lines of aphids; Aphidina, Rhopalosiphina, and Macrosiphina. Systematists are constantly rethinking the relationships among them. Dr. Foottit and his group have used sequences of the gene for mitochondrial 16S ribosomal RNA to confirmed existing current concepts about the relationships of these three lines of aphids defined by traditional systematic approaches. Thus molecular data can be used to support existing phylogenies.

He has used molecular data to understand phylogenetic relationships in aphids of conifer feeding aphids of the genus *Cinara*. There are about 200 similar *Cinara* species. Different groups of species are associated with different hosts. One question he has been able to address is "are the host-related groupings real ?" It appears that most host-related groups are largely monophyletic, except for the paraphyletic, apparently ancestral pine group.

Dr. Foottit has also looked at *Lygus* bugs using both morphological and molecular data (mitochondrial 16S rDNA, mitochondrial CO1, and nuclear 18S rDNA). Sequence data has resolved phylogenetic relationships to outgroups and raised some very interesting questions concerning sistergroup relationships within the genus.

Finally, Dr. Foottit is interested in using molecular markers that can distinquish populations of aphids and of western flower thrips. There are many important, practical problems concerning insect pest population movement, particularly among species that serve as vectors of plant diseases.

2) Tom Clarke, UVic (Graduate Student)

Tom Clarke is studying the phylogenetic relationships between carabid beetles of the genus *Nebria* endemic to the Queen Charlotte Islands (QCIs). The question is whether the endemic species

survived in glacial refugia on the QCIs or if they represent rapid speciation after post-glacial migration. Tom has used the polymerase chain reaction to amplify several mitochondrial genes (NADH subunit 1 [= ND1], cytochrome oxidase 1 [CO1], cytochrome B oxidase [CYT B], and others). He has completed DNA sequence analysis of a 360 bp ND1 fragment and found 1 to 2 base pair substitutions between each of the species involved. Work is ongoing. Tom raised the following question, "does the evolution of a gene or a sequence of DNA really reflect the evolution of the species" ?

3) Jens Roland, Nusha Keyghobadi and Kirk Strobeck, at U of Alberta, are interested in the population dynamics of lepidoptera in isolated alpine habitats. They have characterized the movement patterns of the species between habitats and want to use DNA markers (microsatellites) to monitor populations and gene movement. The genetic target they have chosen is single-locus dinucleotide repeat sequences. They are in the process of identifying such repeats, which they will then clone and sequence. Use of single-locus repeat sequences will permit the determination of allele frequencies and heterozygosity.

4) David Carmean, SFU, is trying to resolve relationships between orders of insects. He sequenced nuclear 18S rDNA of Diptera and found that it has higher frequencies of base pair substitution than other groups. The molecular data suggests that the sister group to Diptera may be Strepsiptera and not Siphonaptera as presently believed on the basis of traditional systematic approaches. David's question was "how do you resolve differences in interpretation of molecular and traditional phylogenetic data"; which one is 'right' ?

5) Guy Boivin, Agriculture Canada, is looking for markers (RAPDS) to determine behavioural and physiological differences between strains/populations) of hymenoptera. He would like to have a molecular "key" in which a species/strain/population is characterized by a particular DNA banding pattern. This would be very useful for biological control studies where you want to know the identity of a specimen collected in the field.

Dr. Boivin's comments raised the question, "Can you use DNA markers to determine or characterize a species (or strain) of an insect ?

THE CONSENSUS ISSUES:

The questions raised by those who presented projects and the discussion that followed fall into one basic issue, which is; "What genetic targets do you use to resolve 1) phylogenetic questions and 2) population questions" ?

THE GENETIC TARGETS

The type of genetic target used depends on the question being asked;

I. Phylogenetic Questions

Different parts of genomes evolve (accumulate base pair substitutions) at different rates. Mutations are tolerated in sequences that are "neutral" or "nearly neutral"; that is sequences that are not essential to the function of a gene. If they were essential, then the mutation would inactivate or reduce activity, which may reduce the overall "fitness" of the organism. Sequences that are highly constrained functionally, like 16S and 18S rRNA genes and histones, accumulate mutations very slowly (millions to hundreds of millions of years). Nucleotide substitutions in these sequences have been used to

determine higher order phylogenetic relationships. Sequences that are less functionally constrained like internal non-transcribed spacer regions of rRNA genes and mitochondrial DNA, can be used to address more recent evolutionary relationships.

a) Higher Order Taxa

If the question is one of phylogenetic relationships between higher taxa (orders, superfamilies), then coding regions of mitochondrial 16S rDNA and nuclear 18S rDNA sequences may be good choices.

b) Generic/near species

If the question is one of phylogenetic relationships between genera, species, or sub-species, one can look at internal non-transcribed spacer regions of rRNA genes or mitochondrial DNA sequences like ND1, CO1, CytB, etc. Coding regions of these genes will be more conserved than the non-coding intergenic regions.

II) Population Questions

There has been an evolution in the use of DNA markers for studies of population structure and dynamics as well as for individual identification (paternity). Genomes have many types of repetitive DNA sequences; minisatellite sequences, variable tandem repeat sequences (VNTRs), and microsatellite sequences which consist of di-, tri-, or tetra-nucleotide repeat sequences. Repetitive DNAs can be distributed randomly over the genome (multi-locus) or they can be restricted to a single location (single-locus). DNA fingerprinting was originally based on multilocus minisatellite sequences (Jefferies Probes). Then VNTR sequences, which can be either multi-locus or single-locus, were discovered, multilocus vs single locus. Randomly amplified DNA (RAPDs) is being used by many researchers to characterize strains, populations, and/or species. The original RAPDs used random hexanucleotide sequences as PCR primers. This is a multilocus approach. The discovery of long repeats of two, three, or four nucleotides that are restricted to a single locus opens the way to rapid, sensitive, and accurate measurement of population structure and dynamics. Single-locus nucleotide repeat analysis appears to be the way of the future and the method of choice in population studies because it permits determination of allele frequencies and heterozygosity indices.

In the end, the choice of target really comes down to "whatever works". As more research is completed and more DNA sequences are compared, useful and not-so-useful DNA targets will be identified.

SPECIES CONCEPT

Can molecular data alone be used to determine species? This question is complex and open to lengthy debate. In the end it was decided that molecular, morphological, biogeographic and biological data should be used together in a "whole evidence" approach to systematics.

NEXT YEAR INSECTS AND MOLECULAR BIOLOGY

It was decided that the next Entomological Society of Canada meeting should have a symposium dedicated to the ways in which molecular tools and data are changing our concepts of insect population

structure and dynamics, evolution, and systematics, and how these impact on the concepts of biodiversity and species.

We thank all who participated and hope that the conference next year will see an expanded interest in the molecular basis of insect evolution and a growing appreciation of how molecular biology can be used to answer fundamental questions in all aspects of entomology.

Membership Committee Report

1. Members of the Membership Committee (MC) are H.V. Danks (Chair), and regional Society representatives, currently P. Albert (SEQ), B.K. Mitchell (ESA), K. Moore (ESS), T. Shore (ESBC), and J. Sweeney (AES).

2. Membership of the ESC at April 30, 1995 was 428 regular and 91 student members. In addition to 8 honorary members, there were 76 emeritus members. Subscribers numbered 690. Membership figures for the whole 1995 calendar year are not available until after that year ends. However, to facilitate comparison with figures presented in the 1994 historical review of membership trends (*Bull. Ent. Soc. Can.* **26**(3): 101-113), which are based primarily on calendar years, interim (April 30) and final [Dec. 31] 1994 figures are given here: 433 [455] regular, 82 [91] student, and 77 [77] emeritus members, and 660 [721] subscribers.

3. Initial preparations were made for the production of a membership list on diskette to be available to members for a fee (as decided by the Executive Council in 1994). Information to be included on the diskette was drafted to deal with questions of display by users and copyright protection. However, the effort can be finalized only when the ESC's old Macintosh computer is upgraded. When diskettes are available, a printed but not formally published version of the list will also be produced and made available for a fee.

4. One nomination for Honorary Member was received. The nomination was approved by the MC, and necessary documentation sent to the ESC Secretary for use on the ballot.

5. Recommendations relevant to the work of the MC were included in the report of the subcommittee on revenue enhancement of the Strategic Review Committee.

H.V. Danks
Chair, Membership Committee

Publications Committee Report

The Committee dealt with the following items during 1995:

1. ASSOCIATE EDITORS. At the request of the Scientific Editor, the Committee appointed Drs P. DeGroot, D. Quiring, M. Sharkey, and F. Sperling as new Associate Editors. The members of this Committee agreed that it should have no part in the appointment of Associate Editors and recommend that the Scientific Editor(s), with approval by the President, be solely responsible for appointments of Associate Editors.

2. COPYRIGHT OF E.S.C. JOURNALS. Copyright of *The Canadian Entomologist* and the *Memoirs* has now been registered. The copyright logo will appear on our journals, beginning with the Nov/Dec issue of *The Canadian Entomologist*. Copyright of the entire issue of the journals now rests with the Entomological Society of Canada but copyright of each published article rests with its author.

3. COVER DESIGN. It is hoped and expected that the new cover design will appear with the Jan/Feb issue of *The Canadian Entomologist*. Several habitus drawings suitable for the cover have been received, with thanks to Jim Hammond (Edmonton) and Barry Flahey (Manotick, Ont.). The Committee recommends that one habitus drawing be used for one volume (presently six numbers) of *The Canadian Entomologist* and one volume (four numbers) of the *Bulletin*. Authors of *Memoirs* should provide a habitus cover drawing from the group discussed in their paper.

4. FORUM. On recommendation from the Scientific Editor, the Committee agreed to establish a "Forum" section in *The Canadian Entomologist* to publish shorter papers that discuss, re-evaluate, debate, etc. recently-published work. Papers in the "Forum" will be subject to the same peer review and page charges as other submission.

5. ELECTRONIC DISSEMINATION OF JOURNAL CONTENTS. Committee member S. Fitzpatrick has been in touch with the Managing Editor of the Entomological Society of America regarding our mutual concerns about electronic dissemination. The ESA has agreed that our two Societies should keep in touch about this issue. The Committee, through Dr. Fitzpatrick, will continue to monitor the situation.

6. ELECTRONIC BULLETIN BOARD. Dr K. Floate (Lethbridge) suggested that the E.S.C. use entomo-L as its official e-mail Bulletin Board; this Bulletin Board is at Guelph and Dr. P. Kevan is the list owner. The Committee agreed that it probably would be a good idea to use this Bulletin Board and that Dr Floate be asked to implement this project.

7. ODDS AND ENDS. Three applications for page charge waiver have been received and dealt with. Several books have been received for review.

8. COMMITTEE MEMBERS. Regular members are: C. Cloutier, A.B. Ewen, S. Fitzpatrick, J. Houseman, A. Keddie, P.G. Mason. *Ex-officio* members are: V. Behan-Pelletier (editor, *Memoirs*), F.F. Hunter (editor, *Bulletin*), P. Kevan (editor, *The Canadian Entomologist*), B. Patterson (managing editor), L. Safranyik (president, E.S.C.).

Al B. Ewen
Chair, Publications Committee

Bilingualism Committee Report

The committee has received several texts for translation in 1994-1995 including: (i) the President's Message from both the past and present presidents; (ii) the message from the retiring secretary, Dr. R. West; (iii) announcement for the new secretary, Dr. P. L. Dixon; (iv) a list of the different ESC 1995 meetings provided by the new ESC Secretary, as well as (v) biographies of the candidates for second vice-president, director-at-large and honorary member. In addition, the new chair of the By-Laws, Rules and Regulations Committee, Dr. W.J. Turnock, requested a translation of the recent changes made to the Standing Rules and Committee Guidelines, as well as those previously made by Dr. D.

Quiring. An update of the French version of the Committee Guidelines has been recently sent to Dr. B. Turnock and to Dr. P.L. Dixon.

At the request of Dr. Guy Boivin, 1st Vice-President, I agreed to act as Chairperson of the bilingualism committee for 1995-1996. Drs. J. Brodeur (Laval University) and M. Cusson (Forestry Canada, Quebec Region) have agreed to serve as the other two members.

All translations made this year were done by members of the committee so there have been no charges to the Society. However, I recommend that $500 be reserved just in case the Society has extensive material for translation that necessitates a commercial translator.

Johanne Delisle
Chair, Bilingualism Committee

Finance Committee Report

The Finance Committee met with the Treasurer on September 27, 1995, to review the proposed budget for 1996. In attendance were G. Gibson (Chair), R.S. Anderson, E.C. Becker, and R. Foottit (*ex officio*); absent were D.C. Darling and S. Marshall.

The committee notes with satisfaction that the Treasurer projects a budget surplus of $43,395 for the Society during 1996. However, this surplus should not be considered an operational surplus or net profit because it requires income of $60,000 through sales of *Diseases and Pests of Vegetable Crops in Canada*. To date, *DPVCC* has cost the Society about $143,680 to produce and market, and we have recouped about $67,420 through our share of the proceeds of sale of 1,885 books. Hence, the Society is not expected to profit from *DPVCC* until at least 1997, and inclusion of proceeds from sales in the 1996 budget obscures a projected operational deficit of about $20,600 (excluding *DPVCC* associated income and expenses). Balanced budgets in the future depend on continued, sustained sales of *DPVCC* and reinvestment of all proceeds so that interest on investments can be used to cover normal operational deficits of the Society.

The committee notes two changes to the 1996 budget from previous years. Previous budgets proportioned income from subscriptions (line item 305) between *The Canadian Entomologist* and the *Memoirs*. The 1996 budget allocates $12,000 of subscription income to the Society. This is a methodological change that does not affect total receipts. However, the change was introduced by the Treasurer partly because only one *Memoir* is expected to be published during 1996.

The second change noted was that a new line item (441) has been added to the 1996 budget - $5,000 for storage of societal publications. The committee does not wish to make recommendations prior to results of the Strategic Review, but it is concerned that this new item not be a continuing expense to the Society at the 1996 level.

Gary Gibson
Chair, Finance Committee

Report of the Scholarship Committee

There were 14 completed applications for the Postgraduate Award this year. All applicants were strong contenders, attesting to the high calibre of graduate students in entomological research across Canada. The winners of the Award for 1995 are M. David Biron from the Université du Québec à Montréal, working on the phenology of cabbage maggot, and Ms. Alida Janmaat, from Simon Fraser University, researching honey bee colony response to mite infestation. Seven students applied for the Keith Kevan Scholarship. The winner is Mr. David Caloren from the University of Guelph, who is conducting a phylogenetic revision of clusiid flies.

I would like to thank the members of the Scholarship Committee who waded through the applications and who had the difficult job of rating them: Rene Alfaro, Bev Mitchell, John Conroy, Gord Surgeoner, Daniel Coderre, Geoff Scudder, Rob Roughley, Gary Gibson, and Les Safranyik.

Juliana J. Soroka
Scholarship Chair

Insect Common Names and Cultures Committee

The ICNCC have approved changing the common name of *Dendroctonus punctatus* LeC. from Allegheny spruce beetle to boreal spruce beetle. (The latter has been adopted by the ESA Common Names Committee). If no ESC member objects to this change of name within 30 days of receipt of this *Bulletin*, it will be considered ratified by the Society.

E.M.Belton, Director-at Large, ESC
for R.Roughley, Chair ICNCC
email belton@sfu.ca

Research-Travel Grants Committee Report - 1995

In 1995 there were four applications for Research-Travel Grants from the Entomological Society of Canada. The four candidates were all well deserving of the available grants. The Committee evaluated the four proposals and the two successful candidates were Ms. Kristine A. Justus and Mr. Gabriel Guillet.

Ms. Justus was awarded $2000.00 to travel to the Swiss Federal Research Station in Wadenswil, Switzerland to further her thesis work on "Oviposition Behaviour and sensory physiology of the diamondback moth, *Plutella xylostella* (L.) (Lepidoptera:Plutellidae)".

Mr. Gabriel Guillet was awarded $2000.00 to travel to the Université de Pau et des pays de l'Adour in Pau, France to continue his thesis work on "Evaluationary considerations involving insect-phytotoxic host plant relationships".

Both recipients were planning to do their travel during the late spring and summer. A report from each recipient is expected soon.

The 1995 Research Travel Grants Selection Committee consisted of:

Dr. B. K. Mitchell
Dr. Wade Bowers
Dr. Daniel Coderre
Dr. David Langor
Dr. Imre Otvos
Dr. Les Safranyik (ex-officio)
Mr. Lloyd H. Hollett (chairperson)

The committee members did an excellent job and all applicants received a full list of the comments and recommendations of the committee.

Mr. Lloyd Hollett will continue as chairperson of the Research-Travel Grants Committee for the coming year.

Lloyd H. Hollett
Chairperson

Annual Report of the Entomological Society of British Columbia

The Entomological Society of British Columbia has been busy preparing for this year's joint meeting in Victoria. The last annual general meeting was held on September 22, 1994 and details were provided in last year's report. The Education Committee has been very active and made awards totalling $1,107.25 to a number of B.C. schools to support various entomology projects. The ESC contributed $600 dollars of this total. Volume 91 of the Journal of the Entomological Society of British Columbia was produced by new editor Dr. Peter Belton. Ten scientific papers and three research notes are printed in this year's edition. The next meeting of the society will be on Tuesday, October 17, 1995 at the joint meeting in Victoria.

Terry L. Shore
Regional Director

Annual Report of the Entomological Society of Alberta

The Entomological Society of Alberta and the Entomological Society of Saskatchewan met jointly at the Green Gables Inn, Canmore, AB on October 27-29, 1994. 55 registrants participated and 31 scientific papers were presented. The meeting theme was "Human Activities and Biodiversity of Arthropods". The 1995 meeting of the ESA will be held in Edmonton, November 2-4. David Langor and Andrew Keddie are in charge of local arrangements and Lloyd Dosdall and Alec McClay will develop the scientific program.

The following new officers were appointed: **Regional Director for Southern Alberta** - Rosmarie Declerck-Floate; **Editor** - Michelle WIlliamson; **Vice-President** - Kevin Floate; **Auditor** - Greg Pohl. Continuing officers are: **President** - Andrew Keddie; **Past President** - Alec McClay; **Secretary** - Lloyd Dosdall; **Treasurer** - James Jones. Continuing Regional Directors are: **Central** - Hector Carcamo; **Northern** - Greg Pohl; **Director to ESC** - Bev Mitchell.

Of particular interest to the National Society will be our preparations for the Annual Meeting to be held in Edmonton in 1997. The Crowne Plaza has been chosen as the site (formerly Chateau LaCombe) and the meeting dates will be October 4-8, 1997. Tim Lysyk will be the chair of the Scientific Program Committee.

Bev Mitchell
Edmonton

Annual Report of the Entomological Society of Saskatchewan

The Entomological Society of Saskatchewan held its annual meeting September 8 - 9 at Leader Saskatchewan with the theme "Biodiversity of Arthropods in the Great Sand Hills". In place of a scientific paper session, field collections were made using pitfall traps, sweep nets, and light traps. On day two, Checkerboard Hill was toured and rattlesnakes were observed at close range.

The society is involved in the production of a film on insect pests of canola. This project is spearheaded by Lloyd Harris of Saskatchewan Agriculture with Alf Arthur and Larry Burgess involved in scripting. Completion is expected in 1997. Members gave numerous presentations to school aged children during the past year. Venues included the "Summer Ecology Camp" at the University of Saskatchewan and an "Environmental Workshop" at a Saskatoon school.

It is with great sadness that I report the passing of our colleague, Dr. Eric Whiting, in Saskatoon on April 29, 1995 at the age of 40. Eric will be remembered for his research in the areas of mayfly taxonomy and ecology as well as aquatic environmental impact. His enthusiasm for nature and his talents as a teacher at the University of Saskatchewan will be greatly missed by colleagues, students and friends.

Keith Moore
Regional Director to ESC

The following appointments were confirmed at the 44th Annual Meeting of the Entomological Society of Saskatchewan in Leader, SK. Please note that the following E.S.S. members have been assigned to E.S.C. committees. **Insect Common Names** - Keith Moore; **Membership** - Peter Kusters; **Scholarship** - Julie Soroka; **Public Education** - John Doane; **Endangered Species** - Martin Erlandson; **Regional Director to E.S.C.** -Keith Moore
Also, please note the List of Officers for 1996 of the E.S.S.:

President:	Lloyd Harris Saskatchewan Agriculture and Food 3085 Albert Street REGINA, SK S4S 0B1 Tel. 787-4669 Fax. 787-0428
President Elect:	George Khachatourians Dept. Appl. Microbiology & Food University of Saskatchewan SASKATOON, SK S7N 0W0
Secretary:	Owen Olfert Saskatoon Research Centre 107 Science Place Saskatoon, SK. S7N 0X2 Tel. (306) 975-7014 Fax. (306) 242-1839
Treasurer:	Julie Soroka Saskatoon Research Centre 107 Science Place Saskatoon, Sask. S7N 0X2
Proceedings Editor:	Keith Roney Museum of Natural History Wascana Park Regina, SK. S4P 3V7
Newsletter Editor:	Wayne Goerzen Saskatoon Research Centre 107 Science Place Saskatoon, SK. S7N 0X2

O. Olfert
Secretary, ESS

Annual Report of the Entomological Society of Manitoba

The Entomological Society of Manitoba currently has a membership of 109 individuals, including six honorary members. The activities of the Society have included a number of luncheon meetings during the year and a new members social. The Annual Meeting will take place in Winnipeg on 3 and 4 November 1995. The theme of the meeting will be *"The Structure of Insect Communities"*.

Sadly, the Society's President for 1994-5, Mr Barry Fingler, died during his year of office. Consequently, the President-Elect, Dr R. Currie, assumed the Presidency. Dr Currie will remain President during the 1995-6 Society year. The Society's Secretary for 1995-6 will be Mr Blaine Timlick.

The Youth Encouragement and Public Education Committee has given 20 talks on insects to school children and children in daycare centres. In addition, three workshops with the opportunity for hands-on experience with insects have been held. During the year, slide collections and posters have been purchased to augment the material available for public education.

N. J. Holliday
Regional Director

Annual Report of the Entomological Society of Ontario

Volume 125 of the *Proceeding of the Entomological Society of Ontario* was printed in December 1994 and distributed to 180 subscribers and over 150 members in nineteen countries. A call for papers was also distributed for Volume 126 (1995) by the Editor, Dr. Dolf Harmsen. Volume 126 will be dedicated to the memory of Dr. Donald R. Wallace in recognition of his contributions to the E.S.O. and to entomology in general.

An interim meeting for the Governing Board of the E.S.O. was held at the University of Guelph on 21 April 1995. The 132nd AGM of the E.S.O. was held September 22-24, 1995 at the Holiday Inn, Ottawa.

This report concludes my 3-year term as Regional Director and I would like to extend my appreciation to the E.S.O. and E.S.C. for the opportunity to participate in this capacity.

Officers of the E.S.O. for 1995-1996 are as follows: **President** - Sandy Smith; **President-Elect** - Robert Trottier; **Past President** - Yves Prévost; **Secretary/ESC Rep.** - Barry Lyons; **Treasurer** - Blair Helson; **Editor** - Dolf Harmsen; **Librarian** - Dave Hull; **Directors** - John Heraty, Gary Whitfield, Bruce Gill, Chris Sanders, William Charnetski, Fiona Hunter.

S. MacDonald
Regional Director

Rapport Annuel de la Société d'Entomologie du Québec

L'année 1994 fut moins fertile que la précédente en évènements majeurs pour la SEQ. La Société a consolidé son membership ainsi que la publications du bulletin *Antennae*. Egalement, un joli dépliant intitulé "Menace d'insectes? Non. Insectes menacés!" a été publié et largement diffusé. Réalisé par Mme. H. Chiasson, ce prospectus vise à informer le public sur les espèces menacées et leur habitat.

La réunion annuelle 1994 de la SEQ a été tenue les 2 et 3 novembre à l'Université à l'Université du Québec à Trois-Rivières. Cette réunion a été organisée par M. Jean-Pierre Bourassa et son équipe. Le symposium regroupait neuf conférenciers invités sous le thème "Insectes parasites et parasites d'insectes". Les Actes du symposium seront publiés en 1995 dans un numéro spécial du bulletin *Antennae*. Une trentaine de communications scientifiques ont été présentées. Mme C. Hardy a obtenu le prix Melville Duporte pour le meilleure présention étudiante. M. Jacques de Tonnacour a été recu membre émérite de la Société.

La réunion annuelle 1995 se tiendra à Montréal les 1 et 2 novembre et aura pour thème "L.entomologie urbaine". Le Dr. Denis Bouchard est responsable de cette réunion.

Nous avons appris avec regret le décès de MM. J.E. McFarlane et G. Rioux.

Jacques Brodeur
Représentant de la SEQ à la SEC

Annual Report of the Acadian Entomological Society

The A.E.S. held its 55th Annual Meeting at Roosevelt International Park on Campbello Island, New Brunswick, 25-27 June, 1995. The meeting included a symposium on Insect Conservation, many submitted papers, and a whale watching trip in the Bay of Fundy. Jenny Jaros, University of Maine, won first prize in the student paper competition with her paper: "Effect of irrigation and soil amendment on insect pest densities in potatoes." Many thanks to Cassie Gibbs, Eleanor Groden, and Frank Drummond for organizing the 1994 and 1995 Annual Meetings of the A.E.S.

The newly elected A.E.S. executive are: **President** - Rob Smith; **Vice-President** - Lorne Crozier; **Secretary-Treasurer** - Erika Bent; **Past-President** - Elizabeth Gibbs.

Thanks to Rob Smith, efforts are underway to publish a quarterly newsletter, starting 30 October, 1995; Rob will be editor and Paul Michael Brunelle will do the layout.

The A.E.S. gratefully received $200 from the ESC Public Education Committee in 1995 and has already used most of the money to purchase teaching aides for use by members invited to talk to schools and youth organizations.

Planning is underway for the Joint Meeting of the ESC and A.E.S. to be held at the Lord Beaverbrook Hotel, Fredericton, N.B., 5-9 October, 1996. Topics for symposia and workshops include Geostatistical Analysis in Entomology, Tree Resistance to Insects, and Entomopathogenic Nematodes in IPM.

Elizabeth (Cassie) Gibbs, University of Maine, takes over as the Regional Director representing the A.E.S. at the 1995 closing meeting of the ESC Governing Board. I thank the members of the A.E.S. for giving me the opportunity to serve both the A.E.S. and ESC during my term. It's been fun.

Jon Sweeney
AES Regional Director to the ESC

MINUTES

Governing Board Meeting
Harbour Towers
Victoria, British Columbia
October 14, 1995

The meeting was called to order at 0830 hours on October 14, 1995 by President L. Safranyik. Those present were L. Safranyik, President; G. Boivin, First Vice-President; S.A. Marshall, Second Vice-President; G.H. Gerber, Past President; A.B. Ewen, E. Belton, H.V. Danks and C. Gillott, Directors-at-Large; S. Fitzpatrick and R. West, incoming Directors-at-Large; T. Shore (ESBC), B.K. Mitchell (ESA), K. Moore (ESS), N. Holliday (ESM), B. Lyons (ESO), J. Brodeur (SEQ), and J. Sweeney (AES), Directors from Affiliated Societies; R.G. Foottit, Treasurer; P.E. Kevan, Scientific Editor-Canadian Entomologist; V. Behan-Pelletier, Editor-Memoirs; F.F. Hunter, Bulletin Editor; P.L. Dixon, Secretary; G. Gibson, Finance Committee, J. Soroka, Scholarships Committee and E. Tomlin, Student Affairs Committee.

1. Notice of Meeting

   Notice of this meeting was mailed on August 4, 1995. Notices were published in the March and June, 1995 issues of the *Bulletin* (Vol. 27).

2. Absences and Proxies

   S. Smith, H. Thistlewood (Directors-at-Large); R.S. MacDonald (ESO); T. Galloway (Elections Committee).

3. Additions to and approval of the Agenda

   There were no additions to the agenda.

4. Minutes - Governing Board Meeting, October 15/94

   Minutes of the October 15/94 meeting of the Governing Board were circulated to the Board on November 10, 1994 and published in the December 1994 *Bulletin*.

   C. Gillott moved and G. Boivin seconded that the minutes be accepted.

   Carried No action required

5. Minutes - 44th Annual General Meeting, Oct 18/94

   Minutes of the 44th Annual General Meeting on October 18/94 were circulated to the Board on November 10, 1994 and published in the December 1994 *Bulletin*.

   The minutes will be presented for approval at the Annual General Meeting.

   Action: P.L. Dixon

6. Minutes - Governing Board Meeting, Oct 19/94

Minutes of the Governing Board Meeting on October 19/94 were circulated to the Board on November 10, 1994 and published in the December 1994 *Bulletin*.

C. Gillott moved and N. Holliday seconded that the minutes be accepted.

Carried No action required

7. Minutes - Executive Council Meeting, April 22, 1995

The minutes were circulated to the Board on May 10, 1995.

8. Business arising from the previous minutes

The following items arising from previous minutes were identified and moved for discussion under New Business.

8.1 New Headquarters Committee Chair (Item 9.2.2.2, Exec. Council meeting, April 22, 1995. Moved to 9.2.2.2

8.2 Use of credit cards in purchase of ESC memberships and products (Item 9.2.3, Exec. Council meeting, April 22, 1995). Moved to 9.2.3

8.3 New *Bulletin* Editor (Item 9.2.1, Exec. Council meeting, April 22, 1995). Moved to 9.2.5

8.4 Joint Meeting with the Entomological Society of America (Item 9.2.10.6, Governing Board meeting, Oct 15/94). Moved to 9.2.10

8.5 Approval of change to standing rules (Item 9.2.7, Exec. Council meeting, April 22, 1995). Moved to 9.2.12

8.6 New Chair - Endangered Species Committee (Item 9.2.14, Exec. Council meeting, April 22, 1995). Moved to 9.2.13

8.7 Appointment of Associate/Assistant Scientific Editors (Item 9.2.6, Exec. Council meeting, April 22, 1995). Moved to 9.2.18

8.8 Design, printing and copyright of ESC publications (Items 9.2.18.1 and 9.2.18.2, Governing Board meeting, Oct 15/94). Moved to 9.2.18

9. New Business

9.1 Correspondence

9.1.1 Deaths

Notice was given of the deaths of Clifford Brown, Barry Fingler, John MacFarlane, Graham MacNay, Mac McKinlay, Gerard Rioux, Art Rose, Don Wallace and Eric Whiting.

9.1.2 Letters sent/received

L. Safranyik introduced items of correspondence which required no formal action.

9.2 Reports from Officers, Trustees, Committees and Representatives

G. Gerber moved and G. Boivin seconded that all reports be received.

Carried No action required

9.2.1 Executive Council

The Executive Council's report will be presented at the Annual Meeting. Messages from the President were published in the March and September 1995 issues of the Bulletin.

9.2.2 Treasurer

The Society finished 1994 with another deficit, which continues to decrease each year. All major production costs for the DPVCC book have been paid and we may be able to re-invest some of the money spent on the project within a few months, if brisk sales continue. This is Bob Foottit's last year as Treasurer and he expressed particular thanks to Ms. Sandy Devine for her efforts in the smooth running of ESC headquarters.

The Society Auditors requested a clarification of the financial arrangements between ESC and the Canadian Phytopathological Society regarding the DPVCC book. R. Foottit agreed to send relevant financial information to G. Gerber, who will contact the CPS (Dr. D. Harder, President-Elect of CPS) to develop a course of action.

Action: R. Foottit, G. Gerber

9.2.2.1 Auditor's Report

The Auditor's Report for 1994, as published in the June 1995 Bulletin, will be presented at the Annual General Meeting for approval.

Action: Treasurer

9.2.2.2 ESC Headquarters Committee

Break-ins during 1995 resulted in the loss of computer equipment and damage to the rear entrance way and led to the installation of a security system. Renovations to the house are required, particularly if the basement is to be used for document storage.

Action: J. Cumming.

9.2.3 Finance Committee

G. Gibson presented the Committee's Report and noted the projected deficit in 1996. There are two changes in the 1996 budget from previous years. Starting 1 April, 1996, storage fees will be charged for keeping ESC documents in Agriculture and Agri-Food Canada facilities. Storage options include the ESC Headquarters building in Ottawa, or rental elsewhere.

Currently Visa can be used to purchase subscriptions etc., and the use of Mastercard is being investigated.

9.2.4 Scientific Editors

9.2.4.1 Editor - Canadian Entomologist

P.E. Kevan presented statistics showing that the average turnaround time for manuscripts is from 3.5 to 5 months depending on the amount of revision required. There has been a decline in submissions, probably reflecting a decline in memberships and the number of professional entomologists. Dr. Kevan to consider whether information on the status of manuscript review could come from Associate Editors (through HQ?).

Action: P. Kevan

9.2.4.2 Editor - Memoirs

Due to budgetary cutbacks at Agriculture and Agri-Food Canada, 2 manuscripts submitted in 1994 were withdrawn; thus no Memoirs will be published in 1995. One manuscript is in review and if accepted will be published in 1996. The issue of payment of an annual subscription fee if no Memoirs are published in a given year is being investigated by the Strategic Review Committee.

Action: R. West

9.2.5 Editor - Bulletin

F.F. Hunter summarized the type and number of submissions to the Bulletin in 1995. Dr. Hunter will be resigning as Bulletin Editor and will be replaced on 1 January 1996 by Dr. H. Barclay of the Pacific Forestry Centre in Victoria. The President thanked Fiona, on behalf of the ESC, for her hard work as Bulletin Editor.

Standing Committees

9.2.6 Nominating Committee

The Nominating Committee's report was published in the March 1995 Bulletin and circulated to the Board on August 4, 1995. No additional nominations to those printed in the March Bulletin were received by the Secretary by the April 30th deadline. The requested Standing Rule change (Interim report) to replace the word "Fellow" with the word "Member" in the Standing Rules and Committee Guidelines, was discussed. G. Gerber moved and H. Danks seconded that the change

be approved and the motion was carried. It will be brought forward to the general membership at the 1995 AGM.

Action: W. Turnock

9.2.7 Elections Committee

The following were elected to office: Hugh Danks, Second Vice-President; Sheila Fitzpatrick and Rick West, Directors-at-Large; Ed Becker and Sam Loschiavo, Fellowship Selection Committee; Ed Becker, Honorary Member .

A. Ewen moved and K. Moore seconded that the 1995 ballots be destroyed.

Carried Action: T. Galloway 9.2.8 Fellowships Committee

The Committee's recommendation to recognize Guy Eaden Shewell as the Fellow for 1995 was ratified by the Board in April.

No action required

Continuing Committees

9.2.9 Achievement Awards Committee

The Board extended congratulations to Dr. David Langor, the 1995 recipient of the C. Gordon Hewitt Award, and to Dr. R. Brust, recipient of the 1995 Gold Medal Award.

No action required

9.2.10 Annual Meeting Committee

9.2.10.1 Annual Meeting 1995 - Victoria

The 1995 Annual Meeting will be held October 14-18 at the Victoria Conference Centre with accommodation provided by the Chateau Victoria and the Harbour Towers. Two hundred and thirty participants have pre-registered, up to 300 are expected.

9.2.10.2 Annual Meeting 1996 - Fredericton

The 1996 Annual Meeting is scheduled for October 5-9 at the Lord Beaverbrook Hotel in downtown Fredericton. General Chair is Jon Sweeney, Program Chair is Graham Thurston, Treasurer is Don Ostaff and Fund-raiser is Jeff Stewart. Details will be published in the December 1995 Bulletin.

9.2.10.3 Annual Meeting 1997 - Edmonton

The 1997 Annual Meeting will be held October 4-8, in Edmonton, Alberta, at the Crowne Plaza. Tim Lysyk will chair the Scientific Program Committee. Details will be published in the March

1996 Bulletin.

9.2.10.4 Annual Meeting 1998 - Québec

SEQ was contacted just recently regarding a potential joint meeting in 1998. SEQ expressed interest, depending on whether or not Montreal will be the site of the joint ESC-ES America meeting in 2000. If so, other sites will have to be considered for 1998.

9.2.10.5Joint Meeting with the Entomological Society of America in year 2000

Montreal, Toronto and Vancouver are being considered. ESO is positive about it's role should Toronto be chosen; SEQ and ESBC to discuss potential involvement and advise G. Gerber. G. Gerber to investigate whether the Boards of Trade in the 3 cities might organize and fund site-selection visits. G. Gerber also to consult with the American Society re. sharing of potential profits.

Two motions were approved:

i. G. Gerber was empowered by the Board to negotiate with the ES America in site selection for the 2000 joint meeting (N. Holliday moved and B. Mitchell seconded.).

CarriedAction: G. Gerber

ii. G. Gerber moved and G. Boivin seconded that the ESC Executive Council be empowered to make a decision regarding the site of the 1998 meeting at their April 1996 Executive Council meeting.

CarriedAction: G. Gerber, J. Brodeur (SEQ), T. Shore (ESBC)

9.2.11 Bilingualism Committee

Several texts were translated in 1994-5 and all were done by Committee members at no charge. The Committee recommended that $500 be reserved in case an official translator is required. The Committee report incorrectly states that P. Dixon is the incoming ESC Treasurer, whereas P. Dixon became ESC Secretary in 1995 and G. Gibson will assume the Treasurer duties in January 1996.

The Presidential address in the March Bulletin was published in English only, probably due to the report not being submitted by the President to the Bilingualism Committee in time for translation.

9.2.12 Bylaws, Rules and Regulations Committee

Changes were made to the Standing Rules approved at the last Annual Meeting and to Committee Guidelines at the October 15/94 Board Meeting.

No action required

9.2.13 Endangered Species Committee

This has been another busy year for the Committee. Of particular concern were the Wildlife Trade Act (Bill C-42) and the Canadian Endangered Species Protection Act. Various articles (eg. from Biological Survey of Canada Bulletin), resolutions (in ESC Bulletin) and letters from the Committee, were sent to relevant government legislators at both federal and provincial levels. Despite Committee efforts, it looks as though the Wildlife Trade Act will include all insects rather than just those covered under CITES or commercially traded. Many ESC members participated in public consultations regarding the Canadian Endangered Species Protection Act. This Act is expected to influence activities of the Endangered Species Committee in coming years. There was some discussion regarding the selection of Committee members.

No action required

9.2.14 Heritage Committee

R. DeBoo corresponded with L. McNally of the National Archives of Canada (NAC) and the NAC has asked the Society for the papers of 2 or 3 eminent Canadian entomologists. The Society also wishes to deposit a 2-3 page summary document on a large number of entomologists and asks R. DeBoo to clarify this possibility with NAC and send all relevant correspondence to the Board. Perhaps if papers of selected entomologists are donated to the ESC, they become ESC property they can be deposited directly.

The Committee requested a member from each of Quebec and the Atlantic provinces or Ontario.

Action: R. DeBoo

9.2.15 Insect Common Names Committee

The list of common names was transferred to disk and is being sold by the ESC office at a cost of $6.00. It is selling well.

H. Danks moved and E. Belton seconded the motion that "the Board agrees in principle to the Société d'entomologie du Québec producing and selling at cost paper copies of the ESC's copyrighted diskette version of a list of insect common names, provided appropriate acknowledgement, and the fact that an electronic version is available from the ESC, are included on the paper version".

Carried. Action: H. Danks, J. Brodeur

E. Belton moved and N. Holliday seconded the motion that ESC send the archival database to CAB International in exchange for information on changes in insect scientific names, provided permission has been granted from SPPQ.

Carried. Action: G. Boivin

The Common Names Committee (CNC) should determine what action, if any, has been taken

on the ES America request for a joint common names list, including whether there was any response to L. Safranyik's previous recommendation that ESC correspond with the ESA-CNC. N. Holliday will contact R. Roughley, ESC-CNC Committee Chair who is on sabbatical, and advise G. Boivin regarding the latter. The Board felt that the new ESC-CNC Chair should contact Dr. Bosik, incoming ESA-CNC Chair.

Action: N. Holliday, Chair ESC-CNC

9.2.16 Membership Committee

Membership at April 30, 1995 was 428 regular, 91 student, 76 emeritus and 8 honorary members. The production of a membership list on diskette was initiated but can not be finalised until the ESC's old Macintosh computer is upgraded. As this may take a while, an interim measure was recommended:

That the new Membership Committee Chair should prepare a current membership list in electronic and paper form, as soon as possible.
(Moved: H. Danks, seconded: N. Holliday)

Carried Action: J. Stewart

9.2.17 Public Education Committee

Public Encouragement Grants were given to the AES ($200), SEQ ($200), ESM ($200) and ESBC ($600). All applications for Public Encouragement Grants must come from or through an Affiliated Society.

No action required

9.2.18 Publications Committee

Several Associate Editors have resigned over the past two years and have been replaced by Drs. P. DeGroot (Sault-Ste-Marie), D. Quiring (Fredericton), M. Sharkey (Ottawa) and F. Sperling (Berkeley). The Canadian Intellectual Property Office (CIPO) advised that the ESC has held copyright since 1924 but it has never been registered; necessary forms were sent to CIPO and copyright has been granted. The copyright symbol will appear on the next issues of the Canadian Entomologist and the Memoirs. A new logo is forthcoming. The Committee expressed thanks to Barbara Patterson for her work in arranging the new design for
journal covers, which was circulated. Note that the French on the new covers requires correction.

Action: J. Delisle

The following recommendations were put forward by the Committee:

i that the President approve appointment of Associate Editors recommended by the Scientific Editor and that the Publications Committee have no further role to play in this process

(Moved: A. Ewen, seconded: K. Moore)

Carried Action: W. Turnock

ii that "Instructions to Authors" be amended to include information that the Society has copyright on the journals as a whole but that authors must retain copyright for their individual articles

(Moved: A. Ewen, seconded: G. Gerber)

Carried Action: P. Kevan, A. Ewen

iii that one habitus drawing be used for one volume of The Canadian Entomologist and one volume of the Bulletin

(Moved: A. Ewen, seconded: G. Boivin)

Carried Action: P. Kevan, H. Barclay

iv that authors of Memoirs be required to submit an habitus drawing appropriate to their paper but that if a Memoir is a collection of papers from a symposium for example, the same habitus drawing used for other journals that year be used for the Memoir

(Moved: A. Ewen, seconded: G. Gerber)

Carried Action: V. Behan-Pelletier

The proposal by David Blades re. establishment of an ESC World Wide Web (WWW) site on the internet, was discussed. Membership forms could be made available on the WWW site, and the site would probably be an excellent way to reach prospective student members. ESO has recently established a home-page on WWW. The following motion was considered:
"that the Board approve the idea that ESC establish a WWW site." (G. Boivin to appoint an ad hoc Committee, suggested Chair David Blades).
(Moved: B. Mitchell, seconded: K. Moore)

Carried Action: G. Boivin

9.2.19 Scholarships Committee

The 1995 Scholarship Award winners are M. Daniel Biron (Université du Québec) and Ms. Alida Janmaat (Simon Fraser University). The Keith Kevan Scholarship was won by Mr. David Caloren (University of Guelph). Chair Julie Soroka thanked Committee members and asked for suggestions for additional Committee members, especially from Regional Directors. The Committee recommended that the eligibility section of the Bulletin ads and the application forms be amended as follows:

"While applicants, if eligible, are encouraged to apply for both awards, only one award will be presented per applicant."

G. Gerber moved and K. Moore seconded that the Guidelines for the Scholarships Committee

be amended as phrased in the above recommendation. The motion was defeated (2 members were in favour).

No action required

P. Kevan requested that Dr. V.R. Vickery and Dr. G. Hsiung from the Lyman Entomological Museum, be contacted regarding fundraising for the Kevan Scholarship.

Action: J. Soroka

9.2.20 Research-Travel Grants

Travel Grants for 1995 were awarded to Ms.Kristine Justus and Mr. Gabriel Guillet. A research report by G. Guillet was circulated. Regarding the Committee's final report, it was the Governing Board rather than Dr. Safranyik who were concerned about diversity of Committee membership.

No action required

9.2.21 Science Policy Committee

One of the main Society activities in this area was that of the Endangered Species Committee. Another concern is the impact of federal government cuts in forestry and agriculture research labs. There was a discussion of why the Chair of this Committee is always the First Vice-President, and whether a longer term would be preferable. A motion was presented that although the Chair of the Science Policy Committee does not have to be the First Vice-President, he/she should be a member of the Governing Board. (Moved: N. Holliday, seconded: G. Gerber)

Carried Action: AGM, W. Turnock

9.2.22 Student Affairs Committee

Major activity was organizing the First Canadian Linnean Games to be held at the Annual Meeting in Victoria, for which four teams preregistered. Several ESC members were thanked for their contribution to the Games. Elizabeth Tomlin is resigning as Chair of the Student Affairs Committee and will be replaced by Troy Danyk. There was discussion of co-authorship in the student paper competition, resulting in the motion:

"that the Committee Guidelines (page 16, part 16(3)) be changed by deletion of the words 'and sole author'".

Moved: J. Sweeney Seconded: G. Gerber

Carried Action: W. Turnock

Ad hoc Committees

9.2.23 Marketing Committee

Draft objectives and duties were submitted for review. A questionnaire regarding marketing miscellaneous items to promote the ESC was published in the Bulletin and on Entomo-L. A potential budget for marketing items such as t-shirts and mugs was submitted, with potential start-up costs of $3,000-$4,000. The Board felt that sale of items via mail order from the Ottawa office was not feasible and that potential conflict between
the sale of similar items at annual meetings by the Society and by regional host societies be resolved in advance with each Regional Affiliate. The Board asks the Committee to look at the feasibility and costs of ESC pins. We may be able to market ESC pins, mugs, calendars etc. through commercial parties such as Museums, Insectaria. The Executive anticipates the results of the marketing survey for discussion at the midterm Executive Council meeting in April, 1996.

Action: K. Floate

9.2.24 Diseases and Pests of Vegetable Crops in Canada

As stocks dwindle, ESC and CPS will have to decide whether to proceed with a reprinting. There are sufficient softcover copies for the foreseeable future. On behalf of the Board, the incoming President will write a thank-you letter to J. Garland for Chairing this ad hoc Committee.

Action: G. Boivin

9.2.25 Strategic Review Committee

Preliminary reports of 4 of the 5 subcommittees (Organizational Structure, Publications, Revenue Enhancement and Headquarters Operations), were presented and discussed. The fifth subcommittee (Relationship with Regional Societies) will begin working in the new year.

No action required.

9.2.26 Affiliated Societies

9.2.26.1 Entomological Society of B.C.
9.2.26.2 Entomological Society of Alberta
9.2.26.3 Entomological Society of Saskatchewan
9.2.26.4 Entomological Society of Manitoba
9.2.26.5 Entomological Society of Ontario
9.2.26.6 Société d'Entomologie du Québec
9.2.26.7 Acadian Entomological Society

Reports from the Directors of all the Affiliated Societies were received and will be published in the December Bulletin. Presentations were made by:

T. Shore (ESBC), B.K. Mitchell (ESA), K. Moore (ESS), N. Holliday (ESM), B. Lyons (ESO), J. Brodeur (SEQ) and J. Sweeney (AES).

All of the Affiliated Societies held successful annual meetings and actively promoted entomology between professional and amateur entomologists, students and the general public. Dr. Barry

Fingler, President of ESM during 1994-95, died during his term of office. Volume 126 of the Proceedings of the ESO will be dedicated to the memory of Dr. Don Wallace. Submissions for this memorial volume are invited and must be received by July 1996. Copies of the new SEQ publication "Antennae" were circulated to the Board. No items were brought forward for action by the Board.

No action required

9.3 Other Business

9.3.1New Treasurer

Advertisements were placed in the Bulletin and Gary Gibson will be the new ESC Treasurer effective 1 January 1996.

9.3.2 Ad Hoc Committee on Pollinators in Canada

P. Kevan presented the final report of the Ad Hoc Committee on Pollinators in Canada. The report is entitled "Conserving Pollinators for Agriculture, Forestry and Nature" and co-authored by P.G. Kevan, K.E. MacKenzie and K.W. Richards. Publication could be sponsored through the C.P. Alexander fund following review and referral by an Associate Editor.

Action: L. Safranyik

10. Next Meeting

The next meeting of the Governing Board will be held at 1200 h in the Harbour Room of the Chateau Victoria, Victoria, British Columbia on October 18, 1995.

11. Adjournment

President Safranyik adjourned the meeting at 5:20, October 14, to reconvene at 8:30 on October 15. A. Ewen moved and G. Gerber seconded the adjournment of the meeting at 10:10 on 15 October.

MINUTES

45th Annual General Meeting
Victoria, British Columbia
October 17, 1995

President L. Safranyik called the meeting to order at 1635 hours. Fifty-three members were present.

1. Notice of Meeting

Notices of the meeting were published in the March and June 1995 issues of the *Bulletin* (Vol. 27).

2. Proxies

There were no proxies.

3. Additions to the Agenda and Approval of the Agenda

J. Shemanchuk moved and B. Lyons seconded that the agenda be accepted.

Carried No action required

4. Deceased Members of the Entomological Community

A moment of silence was observed in memory of the following members of the Entomological Community who passed away since the last annual meeting: Clifford Brown, Barry Fingler, John MacFarlane, Graham MacNay, Mac McKinlay, Gérard Rioux, Art Rose, Don Wallace and Eric Whiting. P. Dixon thanked E. Becker for writing letters of condolence to the families of the deceased.

5. Minutes of the 44th Annual General Meeting

Minutes of the 44th Annual General Meeting were printed in the December 1994 issue of the Bulletin (Vol. 26). A. Ewen moved and K. Moore seconded that the minutes be accepted.

Carried No action required

6. Business Arising from the Minutes

There was no business arising from the previous minutes.

7. Report from the Governing Board

President Safranyik presented a report on behalf of the Governing Board. The report from the Governing Board and regular updates are published in the Bulletin.

S. Lindgren moved and T. Shore seconded that the President's Report be accepted.

Carried No action required

7.1 Changes to Standing Rules

Membership approved the following changes to the Standing Rules regarding Associate Editors and the Fellowship and Science Policy Committees:

a) Associate Editors: Change Rule VIII 4(j) to read "Associate Editors shall be appointed by the Scientific Editor with the approval of the President. At least four Associate Editors will be appointed from among the membership of the Society".

b) Fellowship Committee: Change Rules VIII 3(a) and 3(c) by substitution of the word "Member" for the word "Fellow".

c) Science Policy Committee: Change Rule VIII 4(l) to read " The Committee shall consist of nine Members, four appointed and five ex officio as follows: Members of the Board who shall be Chair, First Vice-President, Second Vice-President, Chair of the Public Education Committee and President.

Action: W. Turnock

8. Auditor's Report

R.G. Foottit presented the Auditor's Report for 1994 as published in the June 1995 issue of the Bulletin (volume 27).

R. Foottit moved and B. Lyons seconded that the Auditor's report be accepted.

Carried No action required

9. Elections Committee Report

P. Dixon read the Elections Committee report. Those elected were: Hugh Danks, Second Vice-President; Sheila Fitzpatrick and Rick West, Directors-at-Large; Ed Becker and Sam Loschiavo, Fellowship Selection Committee; Ed Becker, Honorary Member.

10. Installation of Officers

The President called on G. Boivin to escort Hugh Danks, Second Vice-President, to the dais. President Safranyik turned the gavel over to G. Boivin as incoming President of the Entomological Society of Canada. The new President accepted the gavel and thanked the Members for the honour of being elected President. Dr. Boivin also noted that attendance at the 1996 AGM will be very important to discuss Strategic Review Committee recommendations to change ESC structure and operations.

11. Presentation of Service Awards

President Boivin thanked L. Safranyik, outgoing President, for his service to the Society and presented him with a service award. Service awards were also presented to Bob Foottit (outgoing Treasurer) and Fiona Hunter (outgoing Bulletin Editor).

12. Appointment of Auditor

R.G. Foottit moved and I. Otvos seconded that McCay, Duff, and Company be retained as Auditors for 1995.

Carried Action: Treasurer

13. Resolutions

At the request of President G. Boivin, R. West presented the following resolution on behalf of the Entomological Society of Canada:

Thanks to organizing committee

"Whereas the 1995 Joint Annual Meeting of the Entomological Society of Canada and the Entomological Society of British Columbia have met at the Victoria Conference Centre and the Harbour Towers Hotel in Victoria, British Columbia, October 14-18, 1995; and

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

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

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

Be it resolved that the Entomological Society of Canada express its sincere thanks to the Organizing Committee for their hard work and skill in arranging a most worthwhile and entertaining program; and

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

Be it further resolved that the Society express its thanks to the Management and Staff of the Victoria Conference Centre and the Harbour Towers Hotel for their courteous assistance during the Meeting."

G. Gerber moved and P. Kevan seconded that the resolutions be accepted.

Carried Action: Secretary

14. New Business

a) E. Becker asked members to notify him regarding any recent retirements of entomologists.

b) P. Kevan noted an article will be published shortly in the Bulletin regarding concerns expressed on the turnaround time for manuscripts submitted to the Canadian Entomologist.

15. Notice of 46th Annual General Meeting

The 46th Annual General Meeting will be held at the Lord Beaverbrook Hotel in Fredericton, N.B. at some time between October 5-9, 1996.

16. Adjournment

President G. Boivin adjourned the 45th Annual General Meeting at 5:05 hours following a motion by E. Becker, seconded by P. Kevan.

Carried No action required

MINUTES

Governing Board Meeting
Chateau Victoria
Victoria, British Columbia
October 18, 1995

The meeting was called to order at 1200 hours on October 18, 1995 by President G. Boivin. Those present were G. Boivin, President; S.A. Marshall, First Vice-President; H.V. Danks, Second Vice-President; L. Safranyik, Past-President; S. Fitzpatrick, R. West, C. Gillott, A.B. Ewen, Directors-at-Large; T. Shore (ESBC), B.K. Mitchell (ESA), K. Moore (ESS), N. Holliday (ESM), B. Lyons (ESO), J. Brodeur (SEQ), and J. Sweeney (for C. Gibbs, AES), Directors from Affiliated Societies; R.G. Foottit, Treasurer; P.E. Kevan, Scientific Editor-Canadian Entomologist; P.L. Dixon, Secretary; G. Gibson, Finance Committee and T. Danyk, Student Affairs Committee.

1. Notice of Meeting

Notice of this meeting was mailed on August 4, 1995 and given at the Board Meeting of October 14, 1995.

2. Absences and Proxies

H.Thistlewood and E. Belton (Directors-at-Large) sent regrets.

3. Additions to and approval of the Agenda

There were no additions to the agenda.

The agenda was accepted following a motion made by H. Danks and seconded by B. Lyons.

Carried No action required

4. Business Arising from Previous Governing Board Meeting

a) The Heritage Committee requested members from Québec, Ontario and the Atlantic Provinces.

Action: J. Brodeur, B. Lyons, C. Gibbs

b) An ad hoc Committee to look into an ESC Web site on World Wide Web (WWW), was announced. G. Boivin will Chair the Committee with S. Marshall, D. Blades and B. Mitchell as members.

K. Moore moved and L. Safranyik seconded that "the ad hoc Committee proceed to establish a "test" home page on a WWW site as soon as possible, provided no costs are involved".

Action: G. Boivin

6. Other Business

6.1 Appointments

6.1.1. Executive Council

T. Shore moved and S. Fitzpatrick seconded that the Executive Council for 1995-96 be: G. Boivin, President; S.A. Marshall, First Vice-President; H.V. Danks, Second Vice-President; L. Safranyik, Past-President.

Carried No action required

6.1.2. Trustees

B. Lyons moved and G. Boivin seconded that the Trustees for 1995-96 be: Treasurer, R. G. Foottit, (until 31 December 1995) and G. Gibson (effective 1 January 1996); P.G. Kevan, Scientific Editor (Canadian Entomologist); V. Behan-Pelletier, Scientific Editor (Memoirs); Bulletin Editor, F. Hunter (until December 31, 1995) and H. Barclay (effective 1 January 1996); P.L. Dixon, Secretary.

Carried No action required

6.1.3. Committees and Representatives

R. West moved and L. Safranyik seconded that the Governing Board approve the list of Committees and Representatives as prepared by the President and further that the Governing Board accept the President's appointees to remaining positions to be filled. The President will write to all Committee Chairs and Representatives confirming their appointment for 1995-1996.

Carried Action: G. Boivin

The Secretary will send terms of reference to all new Committee Chairs.

Carried Action: P.L. Dixon

6.2 Budget

The Board noted that $2500.00 should be added for potential costs for G. Gerber site-selection visits (for year 2000 Annual Meeting). L. Safranyik moved and N. Holliday seconded that the budget for 1995 as amended by the Treasurer be approved.

Carried Action: Treasurer

7. New Business

a) N. Holliday moved and T. Danyk seconded that the President write a letter on behalf of ESC, endorsing the importance of assembling a data base on anthophilous Diptera.

Action: G. Boivin

b) The President approved suggested additions to the Editorial Board of the Canadian Entomologist, namely F. Hunter, J. Schmidt and T. Laverty.

No action required

c) In order that recommendations of the Strategic Review Committee be available for consideration by the membership before the 1996 Annual General Meeting, details will be published in the September 1996 Bulletin.

Action: R. West

8. Next Meeting

The next meeting of the Governing Board will be held on October 5 and 6, 1996 beginning at 0900 hours at the Lord Beaverbrook Hotel, Fredericton, N.B. The Strategic Review will be discussed on Day 1 and the usual Business meeting will be held on Day 2.

9. Adjournment

The meeting was adjourned by President G. Boivin at 13.30 hours. Adjournment was moved by A. Ewen and seconded by C. Gillott.

ARTICLES

Gold Medal Address
Entomology - A Medical Veterinary Perspective

presented by Dr. Reinhart Brust
University of Manitoba
at the ESC Annual General Meeting, Victoria, B.C.

It is a great honour to receive the Entomological Society of Canada's Gold Medal. I thank my colleagues for their generosity and good will in nominating me, and I thank the members of the Achievement Awards Committee for recommending me for the award. I am proud, and I feel very privileged to be in the Department of Entomology, at the University of Manitoba, where my colleagues are outstanding teachers and researchers. I have benefited from their generosity, and their many scientific achievements, and I want to say a special thank you to Emeritus Professor Cam Jay, and to Professors Neil Holliday, Patricia MacKay, Terry Galloway, Rob Currie and Rob Roughley. I wish to acknowledge the substantial achievements of the graduate students that I have had the pleasure, and good fortune, to spend time with in the pursuit of new discoveries in mosquito research.

For my presentation I have selected the topic of Medical and Veterinary Entomology as a discipline, and I want to present my personal view of this discipline in light of past and present accomplishments in Canada, and to a lesser extent in the United States,and its role in the management of human and animal health.

Major accomplishments in entomology in human and animal health began over 100 years ago in Asia and Europe, with the discovery that arthropods were vectors of nematodes that caused human filariasis and of protozoan parasites that caused malaria in birds and humans. This began the golden age of discoveries in medical and veterinary entomology, linking disease outbreaks with the pathogen and the arthropod vector.

North Americans took part in the discoveries that arthropods were an essential part of the disease cycle. Canadian and American scientists laboured to solve the cause of tick paralysis, Rocky Mountain spotted fever, bubonic plague and tularemia, and then succeeded in developing strategies for the control of the arthropod vectors of these pathogens. American scientists were instrumental in the control of the vectors of Texas cattle fever, malaria and yellow fever virus in the United States, Central and South America and in parts of the Caribbean. Americans also succeeded in reducing the risk of human contact with western, eastern, and Venezuelan equine encephalomyelitis, St. Louis encephalitis, California encephalitis, Colorado tick fever, murine typhus, and in more recent years, Lyme disease.

Cattle warble fly research and control is synonymous with Agriculture Canada entomology research programs first in Kamloops and later in Lethbridge, AB. Research on tick paralysis and Rocky Mountain spotted fever, tularemia and bubonic plague vectors was conducted at the federal entomology laboratory at Kamloops, and to the south of us at the Rocky Mountain Laboratories in Montana. Research on western equine encephalomyelitis vectors in the United States was conducted at Ft. Collins, CO, at Berkeley and Bakersfield, CA, and in Canada at the Manitoba Department of Health in Winnipeg, and the Agriculture Canada stations at Ottawa, and Saskatoon. Research on St. Louis encephalitis, California encephalitis and Colorado tick fever vectors was conducted at the Communicable Disease Center, Fort Collins, CO, and Atlanta, GA.

Medical Veterinary Entomology Research in Canadian Government Laboratories

Canadian Federal Government entomology priorities beginning with the appointment of James Fletcher, the first Dominion Entomologist in 1884, involved the biology and control of ectoparasites of domestic animals and humans. In western Canada, paralysis in sheep resulted in thousands of deaths, and ticks were later incriminated as the causative agent. In 1899, Theodore (Tamm) Moilliet found a rabbit dying of tularemia, and picked off the rabbit tick, *Haemaphysalis leporispalustris*, from which the disease-producing organism was first isolated.

Mosquitoes, black flies and other biting flies caused serious medical problems for workers in BC agriculture and in the BC forest industry, and farm animals suffered severely from mosquitoes. Economic losses from biting flies, due to lost work days in the forest industry, and loss of clients in the tourist industry, were forcefully communicated to politicians in BC, and in turn to politicians in Ottawa. The federal entomologist from Agassiz, BC, Reginald Treherne, and Dominion Entomologist, C. Gordon Hewitt, Ottawa, drafted the first Mosquito Control Act for the B.C. legislature in 1918. The Act was passed the following year, and Hewitt employed Eric Hearle, a recent entomology graduate from

Guelph, to study the mosquito problem in the Lower Fraser Valley, and to outline a control strategy. Hearle did an outstanding piece of research on the biology of the pest mosquitoes that is unrivalled in the literature on mosquitoes in western Canada. In 1926, Hearle was sent to direct the new Dominion Entomology Laboratory at Indian Head, SK, and to conduct research on the biology and control of livestock ectoparasites in western Canada. After setting the direction for research at Indian Head, Hearle was moved to Kamloops, BC, to begin a Veterinary and Medical Entomology Laboratory. In 1927, Hearle was invited to Winnipeg by H.M. Speechley, to address Public Health personnel and community leaders on mosquito biology and control in the prairies. This resulted in the first community organized mosquito control program in Canada, and after 68 years of continuous operation, is the most successful mosquito control district in Canada.

Hearle directed the Kamloops veterinary and medical entomology research program until he died in 1934. George Spencer, Professor of Entomology, University of British Columbia, and Ted Moilliet (son of Tamm Moilliet) conducted the research programs begun by Hearle. Later, George Rich, Jerry Weintraub and Dick Painter took up Hearle's work on warble flies and horn flies. Their research efforts at the Agriculture Canada Research Station at Lethbridge, AB, produced long lasting results in warble fly control that has benefited cattle producers throughout North America.

At Saskatoon, SK, Alfred Cameron, Arni Arnason, Jake Rempel and Hartley Fredeen conducted studies on the biology and control of the black fly *Simulium arcticum*, a serious pest of cattle in SK and AB. Alfred Cameron and Norman Criddle of Manitoba, teamed up to study the tabanid fly pests of cattle in MB and SK.

The veterinary and medical entomologists at Kamloops, Lethbridge and Saskatoon did much of the early basic and applied research on warble flies, horn flies, ticks, mites, fleas, lice, black flies, tabanids, stable flies, house flies and bot flies in western Canada, that has served the agriculture industry so well for the past 50-60 years.

The International Conference on Diseases of Nature communicable to Man.

This Conference was established in 1946, and attended by veterinary and medical entomologists concerned with the vectors of bubonic plague, Rocky Mountain spotted fever, tularemia and western equine encephalomyelitis. Of note were members Jack Gregson, Colin Curtis, George Holland, Cornelius Philip, Fergus O'Rourke, Allen Mail and John McLintock. These entomologists regularly reported their research on arthropod vectors at these annual events, known as the INKIDINK meetings.

The Defence Research Board Advisory Committee on Entomological Research in Canada

The Defence Research Board Advisory Committee, established in 1946, was without doubt the most effective group of medical and veterinary entomologists in Canada during this century. The Department of Defence provided funding for basic and applied research at Canadian universities and at government laboratories. In the mid 1950's there were 40 medical/veterinary entomologists at 17 locations in Canada; 27 person years were at Agriculture Canada stations in Ottawa, Guelph, Saskatoon, Lethbridge and Kamloops and the rest at universities and at the Department of National Defence. Entomologists who served on the Board, and advised the Department of Defence on entomological priorities, are well known names in Canadian Entomology, and several are past recipients of the ESC Gold Medal for outstanding achievement. Many of these scientists conducted the research that has sustained pest management programs on arthropod pests and vectors in Canada and abroad. Of particular

note is Tony Brown who, together with his students at the University of Western Ontario, conducted research on biting fly attractants that became the basis for much of the current research on attractants for the control of biting flies throughout the world. Equally important members and advisors to the Defence Research Board Advisory Committee were Brian Hocking, Ian Lindsay, Wib Haufe, Joe Shemanchuk, Kurt Depner, Mushtaq Khan, Hartley Fredeen, John McLintock, Larry Burgess, Allen West, Bill Baldwin, Bill Friend, Harold Welch, Murray Maw, Derek Riordan, George Wishart, Lloyd Roadhouse, Cecil Twinn, Murray Fallis, George Cooper, Fred Watters, Don Gray, Anne Hudson, Asgier (Thor) Thorsteinson, Doug Davies, Antony Downs, Al Downe, Dick Vockeroth and Gordon Bennett. From the Board's beginning, a United States Army Medical Entomologist was also a member of the Defence Research Board Advisory Committee. Late comers who participated as advisors or Committee members were Phil Corbet, Buck Bellamy, Charlie Osgood, Russ Wright, Monty Wood, Susan McIver, Marshall Laird, Herb Teskey, Tony Thomas, Robert Wright, Peter Belton, Doug Craig, Jack Armstrong, Paul Wilkinson and myself.

The Defence Research Board's role in biting flies research began to change around 1968 to 1971, and in 1972 Agriculture Canada assumed responsibility for the coordination of biting flies research in Canada.

The Department of Defence has continued to fund applied research in medical and veterinary entomology in Canada, and still has a Pest Management Advisory Committee. The Advisory Committee currently includes entomologists Roy Ellis, Joe Shemanchuk, Gordon Surgeoner and Peter Belton, as well as non-entomologists. DND has recently supported the research and the publication *in press* on 'The Black Flies of North America', by Monty Wood et al., Cornell University Press, and has committed support for a new book on the 'Ticks of Canada', edited by Harvey Artsob.

International Symposium on Biting Fly Control and Environmental Quality, Edmonton, AB, May, 1972.

This symposium was organized by the Defence Research Board Advisory Committee and the Department of Entomology, University of Alberta, to assess the state of knowledge on biting fly biology and control. The outcome of the Symposium was that Agriculture Canada was now ready to draft some new policies on future biting flies research and control in Canada. To facilitate this objective, a work planning session was organized in Saskatoon, SK, in November of the same year.

Biting Flies Work Planning Meeting, Saskatoon, SK, November, 1972.

Some 40 medical/veterinary entomologists and veterinarians from Canada took part in the 3 day meeting at Saskatoon. In summary, the recommendations from this meeting stated that a Canada Committee on Biting Flies should be established, which would report to The Canadian Agricultural Services Coordinating Committee. This Committee would have a series of tasks which included helping to secure funding to support research on the life history, behaviour, and sensory physiology of pest biting fly species.

Expert Committee on Biting Flies (ECBF)

The ECBF was formed in 1973, and met twice annually for the first few years. It consisted of medical/veterinary entomologists from each province in Canada and included one member from DND

and one member from the United States Armed Forces. Permanent members, and those who served at different times, included members of the former Defence Research Board Advisory Committee plus more recent members and advisors such as Bruce Taylor, Russ Roberts, Andy Kolach, Jim Jowsey, Bob Costello, Jean Hollebone, Jim Kelleher, Jacques Cartier, Dick Prentice, Harry Smith, Max Garvie, Murray Colbo and Antoine Aubin. One of the regular issues discussed at some length was that the Federal Government should be encouraged to establish a Biting Flies Centre in Canada.

The role of the ECBF expanded over the years to include other pests, and the title was changed to the Expert Committee on Insect Pests of Animals (ECIPA). The ECIPA included new members and advisors such as Ali Khan, Doug Colwell, Peter Mason, Mary Galloway, Terry Galloway, Hugh Philip, Jim Madder, Roy Ellis, Robert Trottier, Dave Gregory, Heidi Grogan, Lynn Biggert, and Dave Lewis. In 1978, the ECIPA recommended to Agriculture Canada that a contract be negotiated with a Canadian University to undertake a feasibility study for the establishment of an information and research coordination centre for biting flies activities in Canada. This recommendation was instrumental in the establishment of The Canada Biting Fly Centre.

Recently there has been a further name change of the Expert Committee from Insect pests of Animals to Arthropod Pests of Animals (ECAPA). The Committee has been reduced in status to a subcommittee that reports to the Expert Committee on Animal Health. The ECAPA and the Western Committee on Livestock Pests met last in Winnipeg in 1993, and although greatly reduced in membership, are meeting again here in Victoria under the chairmanship of Doug Colwell of Lethbridge, AB.

Canada Biting Fly Centre (CBFC)

In 1979 an Agriculture Canada contract was negotiated with the University of Manitoba. The contract funded a 2 year feasibility study on the need for a national biting fly centre. The results of the study showed there was strong support throughout Canada for a national centre on biting flies that would coordinate and conduct research, collect and supply the latest information on all aspects of biting flies, keep an inventory on major progress in research and control worldwide and keep an inventory on biting fly workers and their research.

The ECIPA recommended that a Biting Fly Centre be started at the Department of Entomology, University of Manitoba. An Administrative Committee was established under the auspices of the Office of Research Administration, University of Manitoba, and was chaired by the Head of the Department of Entomology. Mary Galloway was appointed Director of the Canada Biting Fly Centre in 1981, and the Centre was funded through research contracts between the University of Manitoba and the funding agencies. Mary Galloway was assisted in the research contracts by researchers Randy Gadawski and Lloyd Dosdall. This team conducted extensive research on the use of *Bacillus thuringiensis israelensis* (BTI) in Saskatchewan and Ontario rivers for the control of black fly pests of cattle and humans. The CBFC also developed and evaluated efficacy, and impact of control programs, and collaborated in evaluating alternative control agents. Together with entomologists on the ECIPA, the CBFC prepared a Manual for the control of western equine encephalomyelitis in Canada. Contract funding for medical and veterinary entomology research became difficult to find in the late 1980's. Because the salaries of the Director and the staff were totally dependent on contract monies, the Canada Biting Fly Centre was forced to close in 1989.

Medical Veterinary Entomology Research and Graduate Student Training in Canada Today

Veterinary entomology research on livestock pests in Canada is now concentrated in the Lethbridge Agriculture Canada Research Station, with projects directed by Doug Colwell, Tim Lysyk, Bob Baron and Kevin Floate; at the University of Manitoba, with research directed by Terry Galloway and at the University of Guelph under the direction of Gordon Surgeoner. Graduate training in veterinary entomology is currently available at the Universities of Manitoba and Guelph, and training arrangements may be possible where expertise exists within Federal Government laboratories or at other Canadian universities. In medical entomology, with my retirement this year, as far as I know there is no ongoing graduate training in this discipline in Western Canada.

Opportunities for graduate student training are slim, a consequence of the misguided priorities in allocation of research support. A way for graduate students interested in medical entomology research to beat the system over the next decade might be to take specialized training in molecular techniques. This could land them a job in biotechnology, where they might use their 'free time' to study the biology of the arthropod(s) of interest. When governments, universities and funding agencies in Canada discover their mistake, and return to creating positions and funding studies on the ecology, epidemiology and control of arthropod pests and vectors, these scientists will have the biological knowledge to apply for these positions and to apply for research funds. Mosquitoes still rank as the most pestiferous insect in respect to human ectoparasites in Canada. Should a new research/teaching position in arthropod vector ecology be established in western Canada, I have data on a number of mosquito research projects that I would be happy to pass on.

Emerging Infectious Diseases

On a global scale, mosquitoes and ticks are involved in the transmission of a number of human and animal pathogenic organisms that are epidemic and epizootic in many countries. According to the Communicable Disease Center in Atlanta, GA, over 20 major human disease pathogens have been identified within the last 2 decades, and other agents are still under investigation. New animal disease agents are also being discovered, and more disease agents are developing into serious pests because of ecological, environmental and human demographic changes. What is the cause of such an epidemic of new agents, and new cases of disease? Many of the agents listed under emerging infections are really old agents that have been there all along. For eg. Lyme disease spirochaetes have been discovered in museum specimens of *Ixodes scapularis*, that were collected decades before the spirochaete was described. The spread of Lyme disease to humans is reported to be a result of increased exposure of susceptible humans to the tick vector. Tick populations have increased, due to increased numbers of the adult tick host the white tailed deer. Deer have provided blood meals for increased tick reproduction that previously had been fairly stable. Reforestation around urban homes has increased tick and field mouse habitat, and put more humans in contact with infected nymphal and adult ticks.

New epidemics of yellow fever were largely unexpected in Nigeria in 1986, and in some 25 other African countries since that time. Tom Monath, formerly the Director of the CDC Public Health Laboratory, Fort Collins, CO, has followed the epidemics closely, and reports that about 10,000 cases and 1500 deaths are recorded officially. However, Monath indicates that the unreported cases and deaths are likely 10-20 times that high. It is ironic when one realizes that these deaths could have been prevented. The yellow fever 17D vaccine is one of the most effective viral vaccines available, but few if any people in the area had received the vaccine prior to the epidemic. The virus was endemic in these countries, and

some scientists warned of its return to epidemic levels. The main cause of the epidemic has been reported as a failure in vector surveillance. There had been no surveillance of viral infection rates in the vector, and no surveillance of the conditions favouring population increase in the mosquito vector.

Recent epidemics in Rift Valley Fever have been reported to be the result of dam building, irrigation and flooding of temporary mosquito habitats. Vector populations have increased exponentially, and mosquitoes have transported the virus to new hosts in many new regions of Africa. The virus causes up to 90% mortality in sheep, and about 10% mortality in humans. Tom Monath reports some 200,000 human cases in Africa during the past few years, with the most virulent strain of Rift Valley Fever occurring in Eygpt. Consultation with medical entomologists at the planning stage of such major water use projects could have averted these outbreaks.

Recent epidemics in Dengue Fever and Dengue Hemorrhagic Fever have been the result of storing water in urban areas and the result of an increase in the number of throw away plastic containers which hold rain water and provide a mosquito breeding site. Another important factor is the stock piles of used tires that provide breeding sites for mosquitoes. Human cases are estimated at over a million annually, with several thousand deaths from Dengue Hemorrhagic Fever. Fifty to 60 years ago, Dengue was controlled by eliminating the mosquito breeding sites for *Aedes aegypti* throughout the endemic regions of the Americas and the Caribbean. Control programs were directed by Public Health scientists with the seriousness of an army commander routing the enemy. The battle paid off in ridding the tropics of several of its deadliest pathogens and vectors, including an infestation of *Anopheles gambiae* in Brazil in 1930 and in Egypt in 1940.

Canadians who work or travel in regions where malaria, Rift Valley fever, dengue and yellow fever are epidemic may acquire these diseases and upon their return to Canada be hospitalized while recovering from the infection. Also, as a nation that provides foreign aid monies to countries where these diseases are epidemic, we are in a position to train and send resource personnel as advisors. However we no longer have enough trained medical entomologists who can be those advisors, and the prospect of having more in the next decade or two is not promising.

Future of Medical and Veterinary Entomology Research in Canada

With the massive reduction in funding in this discipline at all Canadian universities and at all federal Government laboratories in Canada, medical and veterinary entomology research in our country is in grave danger of disappearing. Research funding that used to be provided to university scientists by the Defence Research Board, Agriculture Canada and the Natural Sciences and Engineering Research Council of Canada, has been terminated or redirected to more popular causes, namely molecular biology or biotechnology. There is no doubt that some biotechnology research is needed, but not at the cost of destroying the sources of entomological expertise and training. We still need intensive studies on disease vectors. There are massive amounts of research monies being directed to inserting genes into organisms for the control of insect pests and to find genes that would make insect vectors refractory to pathogen transmission. This has great appeal to grant allocation committees subject to government policies, or funding from private industry with perceived, but clearly unconfirmed, expectations of major economic benefits in the near future. But there are serious problems with this approach. An example in my own area of research is that if researchers are successful in finding and incorporating genes that might cause a mosquito species to be refractory to pathogen transmission, how will this be introduced in nature? The only statements I have seen in print, and the statements I have heard directly from biotechnology

researchers, is that genes once released will naturally spread amongst wild mosquitoes, and the new strains will replace the infective population. However, unless the genes confer some reproductive advantage on a species, as occurs in insecticide resistance genes for example, this is highly unlikely. It has been repeatedly demonstrated over the past 25 years, that when genetically marked populations containing some form of chromosome translocation or a mutant gene, are deliberately released into wild populations, the introduced population disappears within 1 or 2 generations. Worldwide, hundreds of millions of research dollars may be pumped into attempting to locate refractory genes, and insert these into arthropod embryos. It must first be demonstrated that the theory for doing this has some validity. Without entomologists who might advise biotechnicians on the ecological realities of the insect in question, an entire generation of research, and massive public funding of research will be wasted. What is vital today is the availability of a number strategically placed entomologists that know the behaviour, the ecology and the detailed life history of the insects involved in pathogen transmission to advise researchers in molecular genetics. I predict there will be a return to these basic aspects in the future, but much is being sacrificed on the way.

I implore the decision makers in the Canadian federal government, in funding agencies, and in universities to examine their policies and pose some penetrating questions about the objectives in their support of biotechnology. Research and teaching positions are hard won gains in science, and research funds and the ability of the Public to pay for research programs are shrinking rapidly. Problems and challenges in medical and veterinary entomology have not disappeared, but rather are decidedly on the increase. Canadians must re-establish some of the research and teaching positions in medical and veterinary entomology that have been terminated, and funding for this discipline must be regenerated if the health of humans and animals is to be maintained, and, in an increasing number of cases, restored to its former level.

PERSONALIA

Dr. Gail Anderson Receives Award

Dr.Gail Anderson, the newly-elected President of the ESBC, was awarded the 1995 Outstanding Alumnus Award for Academic Achievement by Simon Fraser University at a Reception given at the Four Seasons Hotel in Vancouver on Oct 27th. A representative from the Coroner's Office praised her work and described her as Canada's foremost forensic entomologist.

Mont Cazier, expert on Southwestern beetles, spiders, dies at 84

Dr. Mont A. Cazier, professor emeritus of zoology, was born May 27, 1911, in Cardston, Alberta, Canada, and died in his sleep the morning of September 29 in Tempe. A respected scientist, he divided his professional career almost equally between his duties as curator (and chair) of entomology at the American Museum of Natural History in New York City, and as professor of zoology at ASU. It was as though the man was preadapted to teach; he was knowledgeable, glib, anecdotal, familiar and a showman at heart. The students loved him.

Mont was an expert on the systematics and biodiversity of Coleoptera (beetles), Hymenoptera (wasps) and Diptera (flies). He produced more than 61 scientific publications during his career, in which various aspects of the behaviour, ecology and systematics of these groups were detailed. However, his

best known contributions stemmed from the unparalleled breadth and depth of his knowledge of the natural history of the myriad insects, spiders and scorpions inhabiting southwestern North America. He accrued this knowledge from incessant fieldwork, where his sharp eye and basic intuition continually placed him in favourable vantage points for observing the behaviours of these often reclusive organisms.

Mont was passionate about insects, particularly tiger beetles. He saw them as sculpted jewels, amazingly adapted for their particular niches, and carrying a wealth of characteristics and descriptors that awaited the discerning eye of the specialist. He devoted his entire life to that search and was himself amazingly adapted for his niche. His presence, both as a scientist and a man, will be sorely missed. Mont is survived by his wife, Carolyn, four daughters, a son, nine grandchildren and two great-grandchildren.

Carl Olson
Associate Curator
Department of Entomology
University of Arizona
Tucson, AZ 85721

DR. REINHART BRUST
Recipient of the Entomological Society of Canada GOLD MEDAL for Outstanding Achievement in Canadian Entomology

Reinhart Brust was born in Sibbald, Alberta in 1934. He completed his high school education in Swan River, Manitoba in 1952, and graduated from the North American Baptist College in Edmonton in 1955. He returned to Manitoba, where he enrolled in the Bachelor of Science in Agriculture program and graduated in 1959. He completed his M.Sc. under A.J. Thorsteinson at the University of Manitoba in 1960, and received his Ph.D. at the University of Illinois, Urbana under W. Horsfall in 1964. Reiny then served for one year as a research associate in Entomology at the University of Manitoba, before being appointed as an Assistant Professor, and ultimately became Head of the Department from 1987 to 1994. He has just returned from Research Study Leave at CSIRO, Canberra, Australia, where he pursued a long-time ambition to study the ecology of mosquitoes on another continent.

Reiny is recognized as an authority on the ecology of northern species of biting flies, especially mosquitoes. He has published at least 82 papers in refereed journals, 73 publications and presentations in conference proceedings, 9 reviewed technical reports, as well as 10 popular articles and information pamphlets, including four sections in the Canadian Encyclopedia. He and his students laid the groundwork for what is known about the pitcher-plant mosquito, *Weomyia smithii*, in North America.

His paper on the dispersal of *Aedes vexans* is a classic, and has been cited frequently by subsequent authors. However, Reiny is perhaps best known for his expertise on the important vector species for Western Equine Encephalitis virus, *Culex tarsalis*. His research in the areas of seasonal dynamics, induction and termination of diapause, age grading, and parity status of this species has made him one of the most valuable resource people in years of WEE epidemics in Manitoba. In this capacity, he served as Scientific advisor to the Manitoba Department of Health and Social Sciences from 1975 to 1983.

He is a member of the Entomological Societies of Canada, Manitoba and America, the American Mosquito Control Association and the American Society of Tropical Medicine and Hygiene; he is a Fellow of the Royal Entomological Society of London. He has served as Regional Director to ESC (1975-1978), as an Associate Editor for *The Canadian Entomologist* (1983-1994), and he was recognized for his outstanding contribution to ESC in 1975, when he was elected a Fellow of the Society. His editorial skills are highly valued, and he has also been on the editorial board of The Manitoba Entomologist (1973-1977), Mosquito Systematics (1989), the AMCA (1973-1977), and the ESA (1975). Reiny was instrumental in the establishment of the Canada Biting Fly Centre, and he served as the Chair or member of the Administrative Committee from 1980 to 1989.

Reiny is particularly well recognized by the students in the Department who have had the privilege of his association. He has always earned their utmost respect; he is knowledgeable, patient, and he never gives up on students, no matter the degree of difficulties they encounter. Reiny always makes time for his students, even when their interruption may be inconvenient. He cares deeply for the welfare of the students and for his colleagues in the entomological community, and always does everything he can to provide academic and moral support. Reiny Brust has made a significant contribution to entomology and entomologists in this country, and the Entomological Society of Canada is proud to recognize his accomplishments by naming him the recipient of the Gold Medal for Outstanding Achievement for 1995.

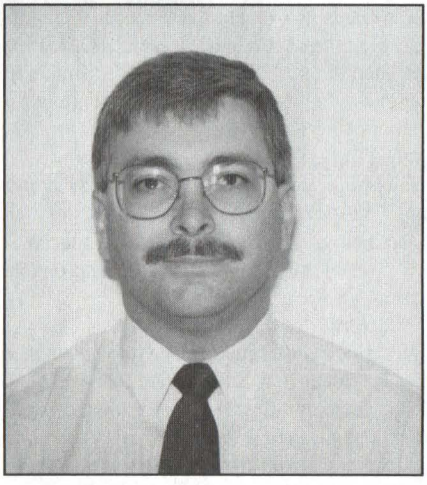
Né à Sibbald, Alberta, en 1934, Reinhart Brust a obtenu son certificat d'études secondaires à Swan River, Manitoba, en 1952 et est diplomé (1955) du North American Baptist College d'Edmonton. Revenu au Manitoba, il s'est inscrit au programme de premier cycle et a obtenu le titre de Bachelier es Sciences en agriculture en 1959. Il termina sa thèse de Maîtrise es Sciences en 1960 à l'Université du Manitoba, sous la direction du Professeur A.J.Thorsteinson; en 1964, il obtint son doctorat de l'Université de l'Illinois, à Urbana, où il a écrit sa thèse sous la direction du Professeur W. Horsfall. Il travailla à l'Université du Manitoba comme assistant de recherche en entomologie durant une année, puis y devint professeur adjoint et fut directeur du département de 1987 à 1994. Il est tout juste rentré d'un stage de recherche au CSIRO, à Canberra, Australia, réalisant ainsi un vieux rêve, celui d'aller étudier l'ecologie des moustiques sur un autre continent.

La réputation de Monsieur Brust comme spécialiste des espèces nordiques d'insectes piqueurs, des moustiques en particulier, n'est plus à faire. Il a publié au moins 82 articles dans des revues avec comité de lecture, 73 dans des comptes rendus de réunions, 9 rapports techniques avec comité de lecture, de même que 10 articles de vulgarisation et feuillets d'information, notamment quatre sections de l'Encyclopédie canadienne. C'est lui, en collaboration avec ses étudiants, qui a posé les bases des études sur le moustique de la sarracénie, *Weomyia smithii*, en Amérique du Nord. Son article sur la dispersion d'*Aedes vexans* est un classique, cité à plusieurs reprises dans les travaux d'autres auteurs. Ses travaux les plus connus restent cependant ceux qui traitent de *Culex tarsalis*, vecteur le plus important du virus de l'encéphalite chevaline dans l'ouest (WEE). Ses recherches sur la dynamique saisonnière, le

déclenchement et la fin de la diapause, la répartition selon l'âge et le statut de parité chez cette espèce en on fait l'un des experts les plus consultés au cours des épidémies d'encéphalite au Manitoba. A ce titre, il a servi de conseiller scientifique auprès du Département de la santé et des sciences sociales du Manitoba de 1975 à 1983.

Monsieur Brust est membre des Sociétés d'entomologie du Canada, du Manitoba et d'Amérique, de l'American Mosquito Control Association et de l'American Society of Tropical Medicine and Hygiene; il est fellow de la Royal Entomological Society of London. Il a été directeur régional de la Société d'entomologie du Canada (1975-1978), directeur adjoint de la revue *The Canadian Entomologist* (1983-1994), et il s'est distingué par l'excellence de sa contribution auprès de la Société d'entomologie du Canada en 1975, année où il a été élu fellow de la Société. Ses compétences dans le monde de la publication sont très recherchées; il a fait partie du comité de direction du Manitoba Entomologist (1973-1977), de la revue Mosquito Systematics (1989), de l'AMCA (1973-1977) et de la ESA (1975). C'est en partie grâce à lui que fut fondé le Centre canadien sur les insectes piqueurs dont il fut tour à tour membre et président du conseil d'administration entre 1980 et 1989.

Monsieur Brust est particulièrement apprécié des étudiants de son département qui ont eu le privilège de travailler avec lui. Il a su gagner leur plus profond respect. Il se distingue par sa compétence et sa patience et il n'abandonne jamais les étudiants, quels que soient les problèmes auxquels ils ont à faire face; il est toujours disponible pour eux, même lorsqu'ils s'adressent à lui à des moments inopportuns. L'intérêt de ses étudiants et celui de ses collègues entomologistes lui tiennent à coeur et il fait tout en son pouvoir pour leur assurer appui académique et support moral. Monsieur Brust a apporté une contribution inestimable à l'entomologie et à la communauté des entomologistes du pays, et la Société d'entomologie du Canada est fière de reconnaître son mérite en lui attribuant la Médaille d'or 1995 pour l'excellence de ses travaux.



DR. DAVID W. LANGOR
Recipient of the Entomological Society of Canada C. GORDON HEWITT AWARD for Outstanding Achievement in Canadian Entomology

The 1995 recipient of the Entomological Society of Canada's C.Gordon Hewitt award for outstanding achievement in entomology by an individual under 40 is Dr. David William Langor of the Northern Forestry Centre, Canadian Forestry Service, Edmonton, Alberta.

Dr. Langor was born in St. John's, Newfoundland on March 10, 1960. He received his B.Sc.(Honours Biology) from Memorial University of Newfoundland in 1982, after completing, under Professor D.J.Larson, an Honours thesis entitled, "Dispersal polymorphism in a colonizing ground beetle,

Bembidion lampros Herbst, in Newfoundland". As an undergraduate student, Dave also compiled up-to-date information on the distribution of insects in Newfoundland and spent several summers working with entomologists at the Newfoundland Forestry Centre. These experiences prompted him to choose a career in forest entomology. He earned his M.Sc. at Memorial University in 1985, also under the supervision of Prof. Larson, with a thesis entitled "Ecology of the eastern larch beetle, *Dendroctonus simplex* LeConte (Coleoptera, Scolytidae), in Newfoundland". He was awarded his Ph.D. in Entomology in 1989 by the University of Alberta upon completion of his thesis, "Host effects on the population genetics and dynamics of the mountain pine betle, *Dendroctonus ponderosae* Hopkins (Coleoptera, Scolytidae)", a project supervised by Professor J. R. Spence.

Dr. Langor had taken up full-time employment as a Research Scientist at the Northern Forestry Centre before completing his doctoral thesis and, from this position, continued to pursue vigorously research about the systematics, ecology, conservation and management of forest insects. He has combined use of traditional character systems with data on molecular characters to sort out the evolutionary relationships and taxonomy of the weevil genus *Pissodes*. In work dedicated to long-term faunal preservation, he has bent his interest in insect diversity to examine how boreal insect species are affected, in both the short and long term, by forestry practices. He has studied the natural enemy assemblages of several forest pest insects and has continued his work on bark beetle biology with projects on the life history and life tables of several western scolytids. He has 24 publications in journals, books and conference proceedings and is a co-author with Dr. Y. Hiratsuka of "*A Field Guide to Forest Insects and Diseases of the Prairie Provinces*". In addition, Dave amplifies the significance of his research for the wider forestry community through regular publication of extension articles.

David Langor has wide-ranging interests in entomology and international cooperation. He is a keen collector and has made trips to Central America, Ecuador and Thailand to gain experience with tropical faunas and to better understand the perils facing tropical rain forests. In addition to participating actively in North American entomological meetings, he has been invited to consider relationships between forestry practices and insect faunas at symposia in China and Finland. He was included in a Forestry Canada delegation sent to China in 1992 to develop more extensive interactions between Chinese and Canadian forest entomologists, is an active member of Forestry Canada's 'Biocontrol Working Group', and is personally involved in efforts to introduce exotic natural enemies to help control Canadian forest pests.

Dr. Langor is an Adjunct Professor of Biological Sciences at the University of Alberta where he participates actively in the forest entomology program. He lectures about the life history and management of wood-boring pests and supervises the research programs of one doctoral and four M.Sc. students. In addition, David makes research opportunities available each summer to several promising undergraduate students.

David has been an active member of the Entomological Society of Alberta since his student days, having held the posts of Vice-President, President, Past-President and Editor. He has served the Entomological Society of Canada as a member of the Scientific Committee for the Biological Survey of Canada (Terrestrial Arthropods) and is currently serving on the Research Travel Grants Committee. Dr. Langor is widely interviewed and consulted for information about forest insects in the Prairie Provinces. Among his colleagues, Dave is recognized as an excellent and enthusiastic co-operator, and through this ability to work easily with others, he promotes active interchange in the entomological community.

Le prix C. Gordon Hewitt, attribué par la Société d'entomologie du Canada à un chercheur de moins de 40 ans pour l'excellence de ses travaux, est décerné cette année à Monsieur David William Langor du Centre de foresterie du Nord, Services canadiens des forêts, à Edmonton, Alberta.

Monsieur Langor est né à St. John's de Terre-Neuve, le 10 mars 1960. En 1982, il a terminé son Baccalauréat es Sciences (option Biologie) à l'Université Memorial de Terre-Neuve, diplôme pour lequel il a entrepris en projet de fin d'étude sous la direction de Monsieur le Professeur D.J. Larson, projet intitulé "dispersal polymorphism in a colonizing ground beetle, *Bembidion lampros* Herbst, in Newfoundland" (Polymorphisme de la dispersion chez un carabe en phase d'établissement, *Bembidion lampros* Herbst, à Terre-Neuve). Au cours de ses études de premier cycle, Monsieur Langor a également fait une importante mise à jour de la répartition des insectes de Terre-Neuve et a passé plusieurs étés à travailler en collaboration avec des entomologistes du Centre de foresterie de Terre-Neuve. Ces diverses expériences l'ont orienté vers la carrière d'entomologiste forestier. Détenteur d'une Maîtrise es Sciences de l'Université Memorial (1985) pour laquelle il a rédigé une thèse intitulée "Ecology of the eastern larch beetle, *Dendroctonus simplex* LeConte (Coleoptera, Scolytidae), in Newfoundland" (Écologie du Dendroctone du mélèze, *Dendroctonus simplex* LeConte (Coleoptera, Scolytidae), à Terre-Neuve), également sous la direction du Professeur Larson, Monsieur Langor a obtenu son doctorat en entomologie en 1989 à l'Université d'Alberta et sa thèse avait pour titre "Host effects on the population genetics and dynamics of the mountain pine beetle, *Dendroctonus ponderosae* Hopkins (Coleoptera, Scolytidae)" (Influence de l'hôte sur la génétique et sur la dynamique des populations chez le Dendroctone du pin ponderosa, *Dendroctonus ponderosae* Hopkins (Coleoperta, Scolytidae)), projet supervisé par le Professeur J.R.Spence.

Monsieur Langor était déjà à l'emploi du Centre de foresterie du Nord et y travaillait comme chercheur scientifique même avant d'avoir terminé ses travaux de doctorat; il s'y est adonné à des études de la systématique, de l'écologie, de la conservation et de l'aménagement des insectes forestiers. La combinaison de méthodes traditionnelles de caractérisation et de techniques de biologie moléculaire lui a permis de jeter de la lumière sur la taxonomie et sur les relations phylogénétiques au sein du genre *Pissodes*. Par souci de la conservation à long terme de la faune, il s'est penché sur le problème de la diversité des insectes dans le but de déterminer de quelle façon les espèces boréales sont affectées, à court et à long termes, par les techniques utilisées en foresterie. Il a étudié les associations des ennemis naturels de plusieurs espèces nuisibles et a poursuivi ses travaux sur la biologie des scolytes en s'attaquant à des projets sur les cycles biologiques et sur les tables de survie de plusieurs Scolytidae de l'ouest. Il a maintenant à son crédit 24 publications dans des périodiques, manuels et comptes rendus de réunions et est co-auteur, avec Monsieur Y. Hiratsuka, de "*A Field Guide to Forest Insects and Diseases of the Prairie Provinces*" (Guide des insectes et des maladies des forêts des provinces des Prairies). La publication régulière d'articles de vulgarisation et d'application pratique à l'usage de l'ensemble des forestiers témoigne de l'utilité de sa recherche.

Les intérêts de Monsieur Langor en entomologie sont multiples et de portée internationale. C'est un ardent collectionneur et ses voyages en Amérique Centrale, en équateur et en Thaïlande lui ont permis d'élargir ses connaissances sur la faune tropicale et de mieux comprendre les problèmes qui menacent les forêts tropicales ombrophiles. Monsieur Langor est un participant assidu des congrès d'entomologie en Amérique du Nord et de plus, il a été invité à se prononcer sur l'influence des procédés utilisés en foresterie sur la faune des insectes au cours de symposiums tenus en Chine et en Finlande. Il a fait partie d'une délégation de Forêts Canada envoyée en Chine en 1992 pour assurer une collaboration plus étroite entre entomologistes forestiers canadiens et chinois. À titre de membre actif du groupe de recherche sur

le contrôle biologique de Forêts Canada, il concentre ses efforts sur l'introduction d'espèces exotiques, ennemis naturels des insectes nuisibles de nos forêts canadiennes.

Monsieur Langor est Professeur associé au Département de sciences biologiques de l'Université d'Alberta où il participe au programme d'entomologie forestière. Ses cours sont axès sur les cycles biologiques et l'aménagement des insectes perceurs du bois; il supervise les travaux d'un candidat au doctorat et de quatre candidats à la maîtrise. Chaque année, il offre des possibilités d'emploi d'été à des étudiants du premier cycle.

Étudiant, David Langor était déjà membre de la Société d'entomologie de l'Alberta et il l'est toujours, ayant été tour à tour vice-président, président, président-sortant et directeur de la revue. Au sein de la Société d'entomologie du Canada, il a été membre du comité scientifique de la Commission biologique du Canada (arthropodes terrestres) et siège actuellement sur le comité d'attribution de subventions pour des voyages de recherche. Monsieur Langor est appelé à participer à des consultations et entrevues fréquentes sur les insectes forestiers des provinces centrales. Il est considéré par ses collègues comme un collaborateur enthousiaste et compétent; cette capacité de pouvoir travailler aisément avec d'autres chercheurs le rend particulièrement apte à promouvoir des interactions fertiles au sein de la communauté des entomologistes.

NEWS OF ORGANIZATIONS

ICZN - Towards Stability in the Names of Animals

The International Commission on Zoological Nomenclature was founded on 18 September 1895. In recognition of its Centennary a history of the development of nomenclature since the 18th century and of the Commission has been published entitled '*Towards Stability in the names of Animals - a History of the International Commission on Zoological Nomenclature 1895-1995*' (ISBN 0 85301 005 6). It is 104 pages (250 x 174 mm) with 18 full-page illustrations, 14 being of eminent zoologists who played a crucial part in the evolution of the system of animal nomenclature as universally accepted today. The book contains a list of all the Commissioners from 1895 to the present. The main text was written by R.V. Melville (former Secretary fo the Commission) and has been completed and updated following his death.

Copies may be ordered from I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U. K. or A.A.Z.N., c/o NHB Stop 163, National Museum of Natural History, Washington, D. C. 20560, U. S. A. The cost is 30 or $50 (including surface postage); members of the American and European Associations for Zoological Nomenclature are offered the reduced price of 20 or $35. Payment should accompany orders.

International Commission on Zoological Nomenclature

Applications published in the *Bulletin of Zoological Nomenclature*

The following applications were published on 28 September 1995 in Vol. 52, Part 3 of the *Bulletin of Zoological Nomenclature*. Comment or advice on these applications is invited for publication in the *Bulletin of Zoological Nomenclature* and should be sent to the Executive Secretary, I.C.Z.N., c/o The

Natural History Museum, Cromwell Road, London SW7 5BD.

Case 2967. ***Chaetodacus latifrons*** **Hendel, 1915 (currently** ***Bactrocera latifrons*****; Insecta, Diptera): proposed precedence of the specific name over that of** ***Dacus parvulus*** **Hendel, 1912**

I.M. White
International Institute of Entomology, c/o Department of Entomology, The Natural History Museum, Cromwell Road, London SW7 5BD, U. K.

N.J. Liquido
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Abstract. The purpose of this application is to conserve the specific name of *Bactrocera latifrons* (Hendel, 1915) (family TEPHRITIDAE) for the *Solanum* fruit fly by giving it precedence over that of *Dacus parvulus* Hendel, 1912. The name *latifrons* has been used widely and consistently in the literature, whereas *parvulus* has been used only three times since publication (twice in 1950 and 1992, for misidentifications). The species is a major pest of peppers (*Capsicum annuum*) and other Solanaceae in south-east Asia. It has been introduced into the Hawaiian islands during the past century where it is also a serious pest. A lectotype for *C. latifrons* is designated.
Keywords. Nomenclature; taxonomy; Diptera; fruit flies; *Bactrocera latifrons*; south-east Asia; Hawaiian islands.

The following **Opinions** were published on 28 September 1995 in Vol. 52, Part 3, of the *Bulletin of Zoological Nomenclature*:

OPINION 1818. *Rhopalosiphum monardae* Davis, 1911 (currently *Hylomyzus monardae*; Insecta, Homoptera): specific name conserved.
OPINION 1819. *Bhatia* Distant, 1908 (Insecta, Homoptera): *Eutettix olivaceus* Melichar, 1903 confirmed as the type species.
OPINION 1820. A.A.H. Lichtenstein's (1796, 1797) *Catalogus musei zoologici - Sectio Tertia. Continens Insecta* and D.H. Schneider's (1800) *Verzeichniss einer Parthei Insekten* -: suppressed, with conservation of some Lichtenstein (1796) names (Insecta and Arachnida)

PUBLICATIONS
BOOK REVIEWS

Anstey , Tom H. , and Aly M. Shady. 1994. Writing and presenting scientific papers and technical reports. Belcor Printing, Nepean, Ontario. xii+101 p., illustr . $25.00. (Copies available from Tom H. Anstey, 12 Warbonnet Drive, Nepean, ON, K2E 5M2.)

It was with some doubts that I agreed to review this book, as I felt that in doing so I would be in conflict of interest, and subconsciously analyzing and reviewing it in relation to my own book on this topic. However, the objectives and contents of this book are significantly different from those in my book on report writing.

There are five chapters in this book titled as follows:

Chapter 1. Planning and Conducting Research;
Chapter 2. Writing Your Paper on Scientific Research;
Chapter 3. Writing and Publishing Your Technical Report;
Chapter 4. Presenting Your Results to an Audience; and,
Chapter 5. Reviewing Papers for Other Scientists.

There are five Appendices totalling 29 pages:

1. Eight Hundred Troublesome Words;
2. Commonly Used Latin Terms and Their Meaning;
3. Tenses of Some Irregular Verbs;
4. Units of Measure; and,
5. Mathematical Equations and the Greek Alphabet.

The first sentence in the Introduction of this book states, "This guide is directed to scientists and engineers who have good technical training, but little experience in reporting their research or investigations." Given this direction, I reviewed this book as a scientist with a moderate amount of experience in reporting on research and investigations.

Chapter 1 has 9 subsections: Define the problem and set your objectives; Gather background information; Formulate a(n) hypothesis; Run a pilot experiment; Plan an experiment; Conduct an experiment; Record results; Analyze results; Draw conclusions; and, Summary. Each subsection is brief, clearly notes what the researcher should and should not do, and carefully warns the researcher of pitfalls, and especially not to underestimate such things as time required for the experiment.

Chapter 2 mentions that a scientific experiment is not complete until it has been published, because only then is the new information spread. Leech (1993:iii) stated similarly that "A report, especially a final report, is an integral part of a (research) program or project, and not an adjunct." The remainder of Chapter 2 is on determining institution publication policy, selecting a journal, preparing your text, figures and tables, organizing a literature review, formatting citations in the Reference section, how to write a title, style of writing, organization, reviewing and editing your manuscript, and what to expect after the paper has gone to a journal for peer review.

Chapter 3 discusses several kinds of reports: general results of investigations; technical manual aimed at a small, specialized readership; and technical report on a particular study. The report format, and the contents of each section, are discussed in detail.

Chapter 4 discusses how to make the best oral presentation of your results. The advice is to be brief and clear, with a short introduction, clear, uncluttered figures and tables, succinct discussion and conclusions, and with time left at the end for questions from the audience. It is suggested that you prepare for questions, and that you practise your delivery, speak slowly and enunciate clearly.

Chapter 5 is a short discussion of what to expect when an editor gives you a peer's paper for review, and shows an example of editor or proofreader marks on text. The chapter ends with four pages of "Further Reading" and "References".

Appendix 1 is a list, 11 pages long, that contains English language words the authors consider to be troublesome. Appendix 2 a list, two pages long, of Latin words and phrases often used in scientific literature, including a cross-referenced listing of Arabic and Roman numerals with English words. Appendix 3 is three pages of tenses and irregular verbs used in English. Appendix 4 contains eight pages of units of measure, symbols and definitions. Appendix 5 contains three pages of mathematical symbols and the Greek alphabet.

It is my opinion that Chapters 1 through 4 are very well presented, and if followed, would begood advice and information for most of us. Chapter 5 is good advice, but the section on "Editorial Symbols" (most call them "proofreader marks") is a bit thin. There are many more proofreader symbols than presented that most of us see frequently in a returned manuscript. I suggest that this section be enlarged considerably, and that the authors use handwritten symbols rather than computer-generated ones. No proofreader will ever make the handwritten symbols that even closely resemble those presented, especially the "delete", "reverse letters, words" and "run on, no paragraph" (i.e., merge paragraphs). The symbols that should be included, among many others, are "reverse case" (i.e., from caps to lower case, and vice versa), *ital.*, spell., V-S (for verb-subject agreement).

All of Appendix 1 can be deleted, because even a casual writer will be using a dictionary with far more words and more complete definitions.

At the beginning of Appendix 2, there should be a warning about not using foreign words and phrases in technical and scientific writing, especially if one is not *au fait* with them. As for Latin terms, I tell my students, "Avoid foreign words and phrases in technical and scientific writing. If you don't know what the word or expression means, don't use it."

Appendices 3 and 4 can be removed with little loss. Most good dictionaries give many more of the tenses of verbs than are presented here. Further, in most institutes, there is at least one person who speaks and writes good English, and through whom all questionable manuscripts should be routed for a quick "in house" review. Many dictionaries have lists of units of measure,and I have several books that are dedicated to being nothing else but, as they list Imperial, U.S. and metric units of measure for physics, chemistry, geology, math and biology. Also, many scientific calculators have all of this information in them at a few finger punches. As for the Greek alphabet, it is in WordPerfect 5.1, 6.1 and Microsoft Word 6.0 programs.

On page 5, Figure 1.1 shows a typed "bibliographic card" with authors' names, date, title, journal, and an abstract. This method of doing things is rather passé, as most scientists and engineers have a computer-generated print out with dozens or even hundreds of listings with the above-mentioned information.

On page 6, and in the Index, I would change "Formulate an Hypothesis" to "Formulate a Hypothesis". The rule is if the "h" is pronounced (as in house, horse), use "a", and if the "h" is silent (as in honor , hour), use "an".

On page 13, paragraph 2, line 1, I would change "The first thing you will do after you decide to report..." to read "The first thing you will do when ready to report...". On page 13, paragraph 1, the authors stated that "A scientific experiment is not complete until it has been published...", thus it is not "after you decide" but "when you are ready".

On pages 20 and 21, I find the list of reference format examples rather cocky and arrogant. For example, reference 1 is "Smart, A.M." (I'm smart?), reference 8 is " Swartz , G. and T.B. Sure" (to be sure?), and reference 14 is " Zaman , A.Y.M. " (I'm the man?). Why not use real examples,and why not be consistent? Reference 1 uses the author's initials, whereas reference 2 uses a mix of initials and full first names. See also references 6 and 7. If the authors are purporting to give examples, then they should provide real ones accurately. This comment holds also for "Further Reading" (pages 63-66) and "References" (page 67), where the authors use a mix of abbreviations and first names for cited authors.

The suggested format for a Report Outline on page 34 is rather out of date, or perhaps the authors considered "in house" reports only, and not consultants' reports. In all of the cases where I have presented a final report to the governments of Canada and Alberta, the "Letter of Transmittal" is submitted at the same time as but separately from the report. The Letter of Transmittal is submitted in an envelope with the final invoice for payment. Further, the "Recommendations" section is also submitted separately from the report. This is especially important if the report will become a public document. If the subject matter of the report has political implications or sensitivities, the government does not want to be embarrassed by showing that it does not follow the recommendations that it has paid for from public funds.

The authors of this book have not considered names of organisms that scientists and engineers use in their experiments, as there is not one reference mentioning correct citation of a scientific name (e.g., Hominidae, *Homo sapiens* Linnaeus, 1758). Most biological scientists will use an organism for their research. It might be *Rattus norvegicus* , *Drosophila melanogaster* , or *Zea mays*, for example. There should be a section showing what the correct citation format is for a species name and a family name for both plants and animals.

There are two important books, *International Code of Zoological Nomenclature* (3rd edition, 1985) and *International Code of Botanical Nomenclature* (Tokyo Code) (1994) that scientists and engineers should have available to them in their institute libraries, unless there is a competent systematist on staff.

I offer the following as references for the authors as ones mentioned above, as ones the authors should be aware of, or as updates of ones mentioned on pages 63-66.

Ambrose, H.W. , III, and K.P. Ambrose. 1987. A handbook of biological investigation. 4th edition. Hunter Textbooks Inc., Winston-Salem, North Carolina. ISBN: 0-88725-074-2. x+204 p., illustr.

Bernstein , T.M. 1986. The careful writer: a modern guide to English usage. Atheneum Printers, New York. xviii+487 p.

The Chicago Manual of Style. 1993. 14th edition. The University of Chicago Press, Chicago, Illinois. ISBN (cloth): 0-226-10389-7. ix+921 p.

Ehrlich , E. (ed.). 1987. The Harper dictionary of foreign terms. 3rd edition. Harper & Row, Publishers, New York. ISBN: 0-06-181576-4. xvii+423 p.

International Code of Botanical Nomenclature (Tokyo Code). 1994. Greuter , W., and J. McNeill (eds). Koeltz Scientific Books, Königstein , Germany. ISSN : 0080-0694. xviii+389 p.

International Code of Zoological Nomenclature. February 1985. Ride, W.D.L et al. (eds). International Trust for Zoological Nomenclature, London. ISBN: 0-85301-003-X (ITZN). xx+338 p. [Next issue will be 1995.]

Leech, R. 1993. Report writing manual: organization, format and style guide for the preparation, writing and presentation of reports. 2nd edition, revised and enlarged. Published by author, Edmonton, Alberta. xiv+173 p., 8 figs, 4 tables.

Scientific Style and Format: the CBE manual for authors, editors, and publishers. 1994. 6th edition. Style Manual Committee, Council of Biology Editors. Council of Biology Editors, Inc., Chicago, Illinois. ISBN: 0-521-47154-0 Hardback. xv+825 p.

The authors have not touched on what I consider to be one of the most important aspects of report writing: what part of the report does one start writing first? Many times I have assisted both peers and students in the start of a report or scientific paper. Most writers become bogged when they try to start writing the Introduction section first. My suggestion, and it has been successful to date, is to start writing the section one knows best, and this is usually the Materials and Methods section. This is followed with the Results, Discussion, Conclusions. Along the way, the References section is added to, and the Introduction fleshed out. The Abstract is written last.

The book is octavo, 14 x 21.5 cm, attractively bound with a plastic spiral coil, and with a hard paper cover with the title printed clearly on the spine half.

Perhaps there is more need for a book of this nature among our Canadian scientists than I thought, as I note in most of the experimental papers published in *The Canadian Entomologist,* from 1990 to the present, that there is a *Discussion* section, or *Results and Discussion* section, but no *Conclusions* section. The lack of a *Conclusions* section indicates to me that the scientists, their peers, and the editorial system of *The Canadian Entomologist* should read this book. I would very much like to see an update and upgrade of this book.

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Hill, Dennis S. 1994. *Agricultural Entomology*. Timber Press, Portland, Oregon, U.S.A. 635 pp. ISBN 0-88192-223-4. Hardcover: $(US)89.95 plus $9.50 shipping

Most books on agricultural or applied entomology tend to have regional biases based on regional interests and arthropod pest problems. This is one book that attempts to look at agricultural entomology internationally and with a general perspective. This has been made possible by the author's diverse professional activities and by his experiences on the international entomological scene. The book is divided into an Introduction, part A (Chapters 1-3) and part B (Chapters 4-14). The Introduction identifies the primary objective as an examination of the Class Insecta and some Arachnida systematically, indicating those which are pest species and those which are beneficial. It then gives a brief but excellent overview of the general current problems facing agriculture globally and their impact on food and fiber production. Since this book is about agricultural entomology, the introduction could have discussed how insect and acarine pests have contributed to the problems of global food and fiber production.

Chapter one looks at insect distributions globally and regionally and considers some of the factors responsible. Insect ecology and aspects of insect population dynamics are reviewed. This section is quite

lucid, simplified and readable. The information allows the reader to perceive why certain insects are found where they are and why others are not, thereby serving one of the book's major purposes. Chapter two examines beneficial insects and their products or functions. Topics include pollinators, biological control agents, the practices of apiculture and sericulture, and a range of natural products obtained from insects. Chapter three looks at insect and mite pest species, offering definitions and descriptions of pests, their status and the damage they cause. While useful, this chapter could have defined more terms, e.g. occasional pest, potential pest and pest resurgence. A list of insect and acarine groups of agricultural, forestry, veterinary and medical importance is provided.

Chapters 4-13 look at Class Insecta while Chapter 14 focuses on Class Arachnida. The basic classification used follows the 10th edition of Imms General Textbook of Entomology (Richards and Davies, 1977). Separate chapters have been dedicated to each of the more agriculturally important and/or diverse insect Orders, including Orthoptera, Hemiptera, Thysanoptera, Coleoptera, Diptera, Lepidoptera and Hymenoptera. The biology and life history of important pest species within each group is discussed and their global distribution and host plant or animal is described. For most species, both the scientific and the common or local names are given. Good black and white pictures and well illustrated line diagrams of insect pests and their typical damage or infested host plant are provided for many representative groups.

The appendix includes notes on collection, preservation and identification of insect and acarine specimens. There is a substantial glossary of the terminology used in the book accompanied by well-labeled diagrams of various body parts of primitive or unspecialized insects. There is an extensive bibliography with over 460 references and indices of common names, scientific names and subjects.

Overall, the title of this book may not be appropriate as agricultural entomology involves more than is included in this book. A more specific title like Agricultural Insect and Acarina Pest Species of the World would have been more accurate. Nevertheless, the book has a pleasant layout and is easily read. The book has relatively few typographical errors. The preface recommends a working knowledge of entomology as a prerequisite for its use by students. It is intended as a tertiary level textbook for courses in agricultural/applied entomology (preferably at the M.Sc. level) and as a reference source for B.Sc. level courses and for field workers and agriculturalists. While there is an admirable attempt to achieve international/global coverage in the text, the distribution of pictures and illustrations is unbalanced (S.E. Asia accounts for close to 70%, United Kingdom and East Africa another 29% of images presented). This may in some ways reduce or limit its international appeal. In addition, few technical institutions and universities provide training in international agricultural entomology. Those which do would find this book inadequate when compared to some regional books with more detailed and more specific coverage. This limits its usefulness as a student textbook. This book may serve best as an excellent reference source for those involved in international agriculture. In some regions (e.g. S.E. Asia) this may serve as a useful student textbook and, to the agriculturalist and field worker, a valuable handbook. To those entomologists in educational and training institutions, this book would be a valuable addition to your library. Dr. Hill should be congratulated for his efforts.

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SCHOLARSHIPS AND GRANTS

Entomological Society of Canada Graduate Research-Travel Grants
Invitation for Applications

Preamble

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

Eligibility

To be eligible, a student must:

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

Format of the Application Form

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

The application form should also be accompanied by: 1) an up-to-date C.V.; 2) a supporting letter from the senior advisor; 3) When appropriate, a support letter from the scientist or Department Head at the institution where the applicant wishes to go.

Evaluation Procedure

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

Timetable and Application Procedure

Application forms, which may be obtained from the Secretary of the Society, must be completed and returned to the Secretary of the Society by **15 January 1996**. The committee will evaluate all applications by 30 April 1996 and determine if, and to whom, grants will be awarded. The successful applicants will be informed immediately, thereby providing sufficient time for students wishing to start in the fall to make necessary arrangements. Grants must be used in the 12 months following the award.

Recipients must provide a short final report, as well as a detailed list of expenses, in the three months that follow the trip. Any money not spent must be returned to the Society.

La Société d'entomologie du Canada Allocations de Voyage pour Étudiants Gradués

Appels pour Allocations

Préambule

Afin the 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 réaliser un projet de recherche, ou de suivre des cours pertinents à leur sujet de thèse qui ne peuvent être entrepris dans leur propre institution.

Éligibilité

Afin d'être éligible, l'étudiant doit:

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

Format du Formulaire de Demande

Le formulaire de demande sera dans le style d'une demande d'octroi et l'étudiant devra fournir les renseignements suivants: 1) le sujet de la thèse; 2) une présentation de la littérature pertinente au domaine d'étude; 3) une présentation concise du statut du projet de recherche en cours; 4) une description de la recherche ou des cours qui seront entrepris, indiquant clairement a) la pertinence des objectifs généraux de la thèse, b) les raisons pour lesquelles ce travail ne peut être entrepris à l'université où l'étudiant est inscrit, 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 pour laquelle la bourse sera requise.

La demande devra aussi être accompagnée: 1) d'un C.V. complet mis-à-jour; 2) d'une lettre de recommendation du directeur de thèse; et 3) lorsque convenable, une lettre d'appui d'un administrateur de l'institution que le candidat désire fréquenter.

Évaluation

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

Échéances et Procédures

Les formulaires de demande, qui peuvent être obtenus du Secrétaire de la Société, doivent être remplis et retournés pour **le 15 janvier 1996** au Secrétaire de la Société. Le comité évaluera toutes les demandes pour le 30 avril 1996 et déterminera si, et à qui, les bourses seront décernées. Les candidats choisis seront contactés immédiatement, cela afin d'allouer suffisamment de temps pour les préparatifs nécessaires à un départ possible à l'automne. La bourse doit être utilisée dans les 12 mois suivant l'octroi.

Les récipiendaires devront préparer un court rapport final, en plus d'une liste détaillée de leurs dépenses, dans les trois mois suivant le voyage. Tout argent non dépensé devra être remis à la Société.

Entomological Society of Canada Postgraduate Awards 1996

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

Invitation for Applications

Eligibility - **Postgraduate Award**: The successful applicants must be either Canadian citizens or landed immigrants with Bachelor's degrees from Canada universities. Applicants must begin their first year of postgraduate studies between 15 June 1994 and 31 December 1996. 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 must submit a properly completed form, with support documents. Applications must be received by the Secretary of the Society no later than **10 June 1996**.

Process of Selection and Award Presentation - Applications will be reviewed by a committee of the Society. An 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 1996.

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 is desirable and that it does not hinder the progress of their studies. Apart from these assistantships, award holders will devote their full time to study and research and will not undertake any paid work during the school term. They may hold other awards and scholarships.

Transfers - Awards are made on the condition that the winners engage in a program of graduate studies and research for an advanced degree in entomology in Canada. Students, who after receiving the award, wish to change their graduate program or transfer to a foreign university may be asked to decline the award. Any change in the course of study, department or university in which an award winner is registered requires prior approval of the Scholarship Committee. A request for permissions 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. P. Dixon, ESC Secretary
Research Centre, Agriculture and Agri-Food Canada

P.O. Box 37
Mount Pearl, Nfld. A1N 2C1
Telephone: 709-772-4763
Fax: 709-772-6064
Email: dixonp@nfrssj.agr.ca

La Société d'entomologie du Canada Bourse pour Étudiants Post-Gradués 1996

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

Avis

Éligibilité - **Bourse Post-graduée**: Les candidats doivent être Canadiens ou résidents reconnus du Canada et détenir un baccalauréat d'une université canadienne. Les candidats doivent obligatoirement avoir débuté leur première année d'études post-graduées entre le 15 juin 1994 et le 31 décembre 1996, et effectuer leur étude et recherche dans une université canadienne. Les bourses ne seront accordées que lorsque les directeurs de Département auront certifié que les candidats choisis sont inscrits en première année d'un programme d'études supérieures, et ce avec tous les privilèges attachés au statut d'étudiant gradué. Un étudiant qui n'a pu être admis à l'École des Gradués, ou qui s'incrit en vue de compléter l'obtention de crédits, n'est pas éligible à la bourse.

Procédure - Les candidats devront soumettre leur candidature à l'aide du formulaire approprié et y joindre tous les documents requis. Les demandes devront être reçues par le Secrétaire de la Société au plus tard le **10 Juin 1996.** Préciser que vous voulez les formulaires pour la Bourse Post-graduée ou la Bourse Keith Kevan.

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 où ils recevront un certificat. Le paiement de la bourse aura lieu en octobre 1996.

Règlement

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

Transferts - Les bourses sont accordées à 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 champ d'études, ou de transférer dans une université hors du Canada peuvent se voir retirer leur bourse. Après acceptation de la bourse, tout changement de programme d'études, de département ou d'université

devra recevoir au préalable l'approbation du Comité de la Bourse de la SEC. Une telle demande doit être accompagnée de documents provenant des Directeurs des départements concernés.

Frais supplémentaires - La somme offerte est invariable. En aucun cas la Société n'accordera de montant supplémentaire. Des frais additionnelles, par exemple, pour 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 à:

Dr. P. Dixon, Secrétaire SEC
Centre de Recherche, Agriculture et Agro-Alimentaire Canada
P.O. Box 37
Mount Pearl, Nfld. A1N 2C1
Téléphone: 709-772-4763
Télécopie: 709-772-6064
Email: dixonp@nfrssj.agr.ca

Smithsonian Research Fellowships in History, Art, and Science

The Smithsonian Institution announces its research fellowships for 1995 in the fields of History of Science and Technology, Social and Cultural History, History of Art, Anthropology, Biological Sciences, Earth Sciences, and Materials Analysis.

Smithsonian Fellowships are awarded to support independent research in residence at the Smithsonian in association with the research staff and using the Institution's resources. Under this program, senior fellowships of three to twelve months, predoctoral and postdoctoral fellowships of three to twelve months, and graduate student fellowships of ten weeks are awarded. Proposals for research in the following areas may be made:

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

Biological Sciences: Animal behavior and pathology; ecology; environmental studies; evolutionary biology; marine biology; natural history; paleobiology; systematics; and tropical biology.

Deadline: **January 15, 1996.**

Postdoctoral Fellowships are offered to scholars who have held the degree or equivalent for less than seven years. Senior Fellowships are offered to scholars who have held the degree or equivalent for seven years or more. The term is 3 to 12 months. Both fellowships offer a stipend of $25,000 per year plus allowances.

Predoctoral Fellowships are offered to doctoral candidates who have completed preliminary course work and examinations. The term is 3 to 12 months. The stipend is $14,000 per year plus allowances.

*Predoctoral, postdoctoral, and senior stipends are prorated for periods of less than twelve months.

Graduate Student Fellowships are offered to students formally enrolled in a graduate program of study who have completed at least one semester, and not yet have been advanced to candidacy if in a Ph.D. Program. The term is 10 weeks; the stipend is $3,000.

Awards are based on merit. Smithsonian fellowships are open to all qualified individuals without reference to race, color, religion, sex, national origin, age, or condition of handicap.

For more information and application forms, please write: Smithsonian Institution, Office of Fellowships and Grants, 955 L'Enfant Plaza, Suite 7000, Washington, D.C., 20560, or e-mail: siofg@sivm.si.edu. Please indicate the particular area in which you propose to conduct research and give the dates of degrees received or expected.

POSITIONS AVAILABLE

Graduate Opportunity in Tick Research
My research program focusses on the physiology, endocrinology, pharmacology of ticks, and I'm hoping to welcome two more graduate students to my team between May 1996 and January 1997. For further information, please contact:
Reuben Kaufman Department of Biological Sciences University of Alberta, Edmonton, Canada T6G 2E9. E-mail: Reuben_Kaufman@biology.ualberta.ca Fax: + (403) 492-9234 Phone: (403) 492-1279

Termite Treatment Program Coordinator
Position is for a term of 1 to 2 years. The Univ. of Iowa is currently implementing a strategic plan for the treatment of Eastern Subterranean termites: monitoring, gathering data, creating a computer database, treating, baiting on-campus and surveying off-campus sites, homes and businesses. Candidate should have a degree in entomology, have experience in termite treatment, knowledge of construction, knowledge of population biology, collecting data, surveying and maintaining a computer database. The person should be well-versed in the area of termite treatment, including alternative methods, and be able to draw upon the appropriate university resources to efficiently organize and administer the project within the scope of the strategic plan. Copies of the strategic plan, requests for information, submittal of resumes, salary requirements and other interests may be directed to: Dave Jackson, General Manager, Physical Plant Dept., The Univ. of Iowa, 100 Physical Plant Offices, Iowa City, Iowa 52242-1000; fax 319-335-5172; tel 319-335-5062; e-mail dave-jackson@uiowa.edu. (Posted Aug 4, 1995).

Post-Doctoral and Graduate Opportunity: Biodiversity
This study seeks a better understanding of how climate translates into community structure, and will mix surveys with experiments to test a model of Species Energy Theory. Year 1: focus on testing the model through surveys of sites in North and Central America. Years 2 and 3: see if and how climate gradients predict the same changes in community structure along three elevational gradients. Ants are the target group, although there are opportunities to expand this work to include ground-dwelling arthropods. The post-doc will help to build and run a biodiversity lab dedicated to the collection, identification of ants (and other arthropods) on a geographical scale, and curation. Graduate students and undergrads will participate in this lab. The post-doc (PI), and a grad student will perform diversity surveys and other field

work. This will require considerable travel particularly in the first field season. Both grad student and PI are encouraged to develop research complementary to the project. The post-doc must have a PhD by the end of 1996. The graduate student must meet the application requirements of the University of Oklahoma. Knowledge of ant biology, collecting techniques, and taxonomy is preferred but the PI is willing to expand the scope of the work to include another taxon of ground arthropods. Applicants must have a driver's license. Interest in modelling, statistics, and fluency in Spanish is an asset. Post-doc starting salary 22K US (with 5% yearly increases) plus benefits. Per diem furnished during field season. Graduate student salary is 12K US (includes the per diem). Starting dates for both positions are flexible but must be before May, 1996. Grant is fully funded for three years. To apply, send a CV, letter of research interests, and a list of three references to Mike Kaspari, Dept. of Zoology, Univ. of Oklahoma, 730 Van Vleet Oval, Room 314, Norman Oklahoma, 73019; tel 405-325-3371, fax 405-325-7560. (Posted Aug 28, 1995).

Postdoctoral Research Associate (1A) Position

A Research Associate is required to develop monoclonal antibodies for the identification of insect pests, financed by a SMART Award. The ideal candidate would have experience of monoclonal antibody production, ELIZA (using microtitre lates and nitrocellulose membranes) and DNA techniques. The post will initially be for 1 year, but with an expectation of further work for the right candidate. The Associate would be working with others engaged in similar research in a lab fully equipped to produce and exploit monoclonal antibodies, and recently upgraded to provide a recombinant antibody facility. We are looking for a self-motivated candidate, committed to research, who can work without close supervision. Application forms and further details: Personnel Department, University of Wales, 50 Park Place, Cardiff CF13AT; tel 01222-874017; fax 01222-874788. (Posted Sep 4, 1995). Graduate Fellowships in Hawaii The Univ. of Hawaii announces the availability of more graduate fellowships in Ecology, Evolution & Conservation Biology (EECB), from NSF, the MacArthur Foundation and the East West Center. The EECB Graduate Program is designed to provide the interdisciplinary, conceptual and technical diversity required for comprehensive training in ecology, evolution and/or conservation biology. We encourage interested students to write as soon as possible for an application package, to Kenneth Kaneshiro (Chair) or Rosemary Gillespie (Vice Chair), Ecology Evolution and Conservation Biology Program, Univ. of Hawaii, 3050 Maile Way, Gilmore 409, Honolulu, HI 96822. Deadline is Feb 1, 1996; assistantships commence August, 1996. (Posted Sep 7, 1995).

Agriculture and Agri-Food Canada Job Opportunity

The Harrow Research Centre is taking applicants for a technical position in entomology. Initially the position is being filled on a one year term, starting as soon as possible. Qualifications a Masters degree in entomology with experience in the conduct of field, greenhouse and laboratory studies in entomological research, or an acceptable combination of training and experience. For more information please contact Dave Hunt, Agriculture and Agri-Food Canada, Harrow Research Centre, Harrow, Ontario, Canada N0R 1G0; e-mail huntd@em.agr.ca. (Posted Sep 13, 1995).

Postdoctoral Position: Experimental Insect Ecologist

A three-year position is available for a recent PhD to participate in field studies of predator-prey spatial dynamics. We seek an individual interested in experimentally testing predictions of reaction-diffusion theory in a host tree-bark beetle-arthropod predator system. Previous field experience with ecological studies of insects is required. Knowledge of forest insects is desirable but not necessary. Candidates with well-developed quantitative skills are preferred. All requirements for the PhD must be completed by the time of appointment. The starting date is ASAP. This position is based at Storrs, CT, with Dr. Peter

Turchin, but requires spending extended periods of time during the field season (Fall and Spring) at Pineville, LA, with Dr. John Reeve. Send curriculum vitae, statement of research interests, and names, addresses, and telephone numbers of three references to Dr. Peter Turchin, Dept. of Ecology and Evolutionary Biology, Univ. of Connecticut, Storrs, CT 06269-3042; tel 203-486-3603; fax 203-486-4320; e-mail: turchin@uconnvm.uconn.edu. (Reposted Sep 15, 1995).

Graduate Opportunity: Chemical and Acoustic Communication in Arctiid Moths
We are interested in how chemical and acoustic signals are produced, how they travel through the environment, how they are detected, how the receiver responds to them, and ultimately how they have evolved. Arctiids provide a diversity of interactions with which to work and allow a comparative approach to many evolutionary questions. My students and I combine analytical chemical techniques, sonagraphic analysis, electrophysiological techniques, infrared videography, and cladistic analysis in exploring communication systems that are well beyond our own sensory capabilities. Our field studies are in North Carolina, Florida, and in the rainforests of Ecuador. Teaching assistantships are available with annual stipends of $10,500 US, tuition is included, and a research allowance is available to each student. Information: Dr. William E. Conner, Dept. of Biology, Wake Forest Univ., PO Box 7325, Winston-Salem, NC 27109; e-mail conner@wfu.edu. (Posted Sep 25, 1995).

Environmental Biology Fellowships
The University of Notre Dame has graduate research traineeships (PhD) available in Fall, 1996 as part of a NSF-sponsored program designed to link ecology and engineering in addressing environmental problems. The traineeship provides an annual stipend of $14,100 US, full tuition waiver, and substantial research support. Areas of emphasis for program faculty include aquatic ecology, environmental engineering, biogeochemistry, microbial ecology, and ecological genetics. Successful candidates will have excellent baccalaureate credentials, GRE scores, and research experience (during BSc or MSc). Research facilities on campus and at the Environmental Research Center in northern Michigan are outstanding. For information and application forms, write to: Environmental Biology Traineeships, Dept. of Biological Sciences, Univ. of Notre Dame, Notre Dame, IN 46556. (Posted Oct 3. 1995).

Graduate Research Assistantship (Diptera Systematics)
PhD candidate preferred. Monographic and phylogenetic systematics of the Therevidae emphasizing morphological character assessment, as a component of an NSF Partnerships for Enhancing Expertise in Taxonomy (PEET) grant. Collaborative and interactive project based at the University of Illinois and Illinois Natural History Survey, involving Michael Irwin (Univ. Ill.), Donald Webb (INHS), Brian Wiegmann (N. Carolina State Univ.), David Yeates (Univ. of Queensland, Brisbane, Australia). Applicants with experience and knowledge of Diptera and modern systematic methods preferred. The successful applicant may join one or more collecting expeditions, some to southern continents, and to study molecular systematic theory and methods in Wiegmann's lab for 4 to 6 months. Funding augmentation likely for student currently holding PhD fellowship or scholarship that could be applied to this RA. Available Jan, 1996 start. Contact Michael E. Irwin, Univ. of Illinois, 1101 W. Peabody Drive, Urbana, IL 61820; tel 217-333-1963; fax 217-333-6784; e-mail m-irwin2@uiuc.edu. (Posted Oct 17, 1995).

PhD Studentship: Optimising Insecticide Sprayer Design to Minimise Off-target Effects
Available immediately, to start by Jan 1, 1996. Student will examine the potential of controlled droplet application (CDA) sprayers for increasing insecticide efficacy and reducing effects on non-target insects and the environment. Preliminary trials suggest that CDA sprayers can achieve equivalent control to conventional sprayers at 1/10th the application rate. The student will examine how droplet size determines the pattern of deposition of insecticide in the crop, and how this influences mortality of both

target and non-target insects. Interested persons with a good degree in a relevant subject contact Dr. D. Goulson, Dept. of Biology, Univ. of Southampton, U.K.; tel 44-1703-594212. (Posted Oct 18, 1995).

Graduate Research Assistantships in Systematics

Two PhD graduate research assistantships are available for systematic research on tortricine moths. The positions are in the Essig Museum of Entomology and the Insect Molecular Systematics Laboratory at the Univ. of California at Berkeley. Funding is provided by NSF-PEET, and is intended to enhance expertise in systematics at a time when numbers of taxonomists are declining and yet biodiversity issues are more important than ever before. Graduate programs are flexible and are intended to develop strong skills using morphological characters, molecular methods and database management. Graduate student programs may begin Aug, 1996. Graduate support starts at ca. $13,400 US/year, with tuition waiver (including out-of-state). Students must meet requirements for admission to graduate studies at the Univ. of California, Berkeley (including GREs). Assistantship tenure is up to 5 years subject to individual performance and program progress. To apply, obtain application information and forms from the graduate student office, and return completed forms to the same address. Please apply by Dec 15, 1995. Graduate Student Services Office, Dept. of Environmental Science, Policy and Management, 145 Mulford Hall, Univ. of California at Berkeley, Berkeley, CA 94720. Also, please contact us at the address below. Send us your CV, a cover letter with a statement of interests and career plans, and names, phone numbers and addresses (including e-mail) of references: Felix Sperling or Jerry Powell, Dept. of Environmental Science, Policy and Management, 201 Wellman Hall, Univ. of California, Berkeley, CA 94720 USA; sperling@nature.berkeley.edu or powellj@nature.berkeley.edu; fax 510-642-7428. (Posted Oct 29, 1995).

Assistant Professor: Insect Evolutionary Biology

The Department of Biology invites applications for a tenure-track, Assistant Professor position in insect systematics and evolution. A PhD is required; post-doctoral experience is preferred. The successful applicant will be expected to develop an externally-funded research program that uses innovative approaches in the study of insect evolution. Teaching responsibilities will include an upper-division course in insect systematics. Utah State Univ. is a Carnegie I Research institution; the Department of Biology consists of 35 faculty, including several individuals whose primary research interests involve insects. The Department also maintains an Insect Collection with over 2 million specimens. There are opportunities for collaboration through the Ecology Center, the Intermountain Herbarium, the Biotechnology Center, the USDA Bee Biology & Systematics Laboratory, and the Utah Agricultural Experiment Station. Applicants should submit a CV, statement of research and teaching interests, representative reprints, and have at least 3 letters of recommendation sent to: Dr. Frank J. Messina, Insect Evolutionary Biology Search Committee, Dept. of Biology, Utah State Univ., Logan, UT 84322-5305 (e-mail essina@cc.usu.edu). Review of applications begins immediately and continues until the position is filled. (Posted Oct 30, 1995).

UPCOMING MEETINGS / RÉUNIONS À VENIR

Second North American Forest Insect Work Conference

April 6-12, 1996, San Antonio, Texas

CONTACT: Dr. Ronald F. Billings, Tel (409) 639-8170, Fax (409) 639-8175.

48th International Symposium on Crop Protection

May 7, 1996, University of Gent, Belgium

English summaries of all papers will be made available to participants. Topics to be treated include:

Insecticides, Nematology, Applied Soil Zoology, Semio-chemicals; Fungicides, Phytopathology, Phytovirology, Phytobacteriology; Herbicides, Herbology, PLant Growth Regulators; Biological and Integrated Control; Residues, Toxicology, Formulations, Application Techniques. The proceedings will be published in the "Mededelingen Faculteit Landbouwkundige en Toegepaste Biologische Wetenschappen, Universiteit Gent".
CONTACT: Dr. ir. L. Tirry, Faculty of Agricultural and Applied Biological Sciences, Coupure links 653, B-9000 Gent (Belgium). Tel. 32 (0)9 264 61 52; Fax. 32 (0)9 264 62 39 or 264 62 49.

44th Annual Meeting of North American Benthological Society
June 3-7, 1996, Kalispell, Montana
The program features four days of invited, contributed, and poster sessions and workshops on benthic communities and their role in aquatic ecosystems. The Plenary Session of the meeting will be: "Ecology of Pristine River Systems". Special Sessions include: "Contemporary theories in river ecology: lessons learned, lessons forgotten" and "The status and future of taxonomy and reference museums in benthology".
CONTACT: Dr. Jack A. Stanford, Program Chair, Flathead Lake Biological Station, 311 BioStation Lane, Polson, MT 59860 USA. Tel. (406) 982-3301; Fax (406) 982-3201 or Dr. F. Richard Hauer, Local Arrangements Chair. Tel. (406) 982-3301; Fax (406) 982-3201.

Quebec Society for Plant Protection
June 6-7, 1996, Université Laval, Québec
The theme of the Symposium will be: Physical control methods in plant protection.
La thème du Symposium sera: La lutte physique en phytoprotection.
Pour informations prière d'entrer en contact avec:
Dr. Charles Vincent, Centre de recherche et de développement en horticultre, Agriculture et agro-alimentaire Canada, 430 boul. Gouin, Saint-Jean-sur-Richelieu, Québec, Canada J3B 3E6. Tel (514) 346-4494 ext 202 / Fax (514) 346-7740, E-mail (Internet) vincentch@em.agr.ca

International Organization for Biological Control: Sixth International Symposium
September 4-6, 1996, Bembloux, Belgium
Central Theme: Biological control and management of aphids.
CONTACT: Dr. J.L. Hemptinne, Fax 32(0)81.61.45.44, Email: hemptinne@fsagx.ac.be

7th International Symposium on Pollination
June 24-28, 1996, Lethbridge, Alberta, Canada
Pollination: from theory to practise. General topics will include: Implications of evolutionary theory to applied pollination ecology; Modelling pollination; Pollination techniques/methods/standardization; Pollinator foraging behaviour; Commercial bumble bee management for pollination; Native bee management for pollination; Role of pollinators in species preservation, conservation, ecosystem stability and genetic diversity
CONTACT: Dr. Ken Richards, Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada T1J 4B1. Tel. (403) 327-4561; Fax. (403) 382-3156; Email: Richards@abrsle.agr.ca.

XX International Congress of Entomology
August 25-31, 1996, Palazzo dei Congressi, Florence, Italy
CONTACT: Organizing Secretariat, OIC, Via A. La Marmora, 24, 50121 Florence, Italy
Fax. ++39-55-5001912

Questionnaire regarding proposed activities of the Marketing Committee

The Marketing Committee of the Entomological Society of Canada promotes activities which return revenue to the Society. On behalf of the Society, the Marketing Committee is examining the feasibility of selling miscellaneous items (e.g., shirts, mugs, calendars, note cards) with an entomological theme. Related to this effort, the Marketing Committee is also examining the feasibility of the Society hosting a 2x2 colour slide competition at its Annual Meeting. Slides would be of an entomological nature. The best entries would be used to generate photographs for the aforementioned calendars and mugs, with the photographers receiving due recognition.

In order that we better serve the membership of the Society, we ask that you take a few minutes to complete the following questionnaire. The responses we receive will determine whether or not the Society pursues the sale of miscellaneous items and/or the hosting of an annual slide competition. We also would appreciate responses from individuals who are not members of the ESC. Thank you for your attention to this matter.

Kevin Floate/Joe Shorthouse/Richard Westwood
Members of the Marketing Committee, ESC

Sale of Miscellaneous items:

(1) Do you support the proposed sale of miscellaneous items with an entomological theme by the Society?
_____ YES _____ NO
If your answer is no, please explain why.

(2) If you support the sale of miscellaneous items by the Society, indicate which of the following items you would be willing to purchase, numbered in ascending order of preference. For example, __2__ T-SHIRT, __1___ MUG indicates that you would be more likely to buy a mug than a t-shirt. After each item, please indicate your preference.

_____ T-SHIRT with (___ ESC logo, or ____ line-drawing of insect, or ____colour photograph of insect.) What would you pay for this item including shipping charges?
_____ MUG (____ ceramic coffee mug or ____ plastic travel mug) with (___ ESC logo, or ____ line-drawing of insect, or _____colour photograph of insect). What would you pay for this item including shipping charges?
_____ CALENDAR with a colour insect photograph for each month: What would you pay for this item including shipping charges?
_____ NOTE CARDS (blank inside) with (____ selection of insect line-drawings on outside, or ____ selection of insect colour photographs on outside). What would you pay for this item including shipping charges?

(3) What additional item(s) would you like to see sold by the Society (e.g., pens, fridge magnets, golf shirts, bumper stickers)?

Hosting of 2x2 slide competition:

(4) Do you support, in principle, the Society hosting a 2x2 slide competition at its Annual Meetings?
_____ YES _____ NO
If your answer is no, please explain why.

5) Would you be willing to serve on an ad-hoc committee organizing this event?
_____ YES _____ NO If YES, please provide the information indicated

Name:
Address:
Phone No.
FAX No.
E-mail address:

Please send your responses to the above questionnaire to:

Kevin Floate
Agriculture and Agri-Food Canada
P.O. Box 3000
Lethbridge AB T1J 4B1

ph: (403) 327-4561
FAX: (403) 382-3156
E-Mail: FLOATEK@ABRSLE.AGR.CA

ENTOMOLOGICAL SOCIETY OF CANADA
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA
393 Winston Ave., Ottawa, Ontario K2A 1Y8
Application for membership - (new members only)
Demande d'adhésion (nouveaux membres seulement)

Name and Address (please print):
Nom et Adresse (lettres moulées):

telephone (bus.) / téléphone (au travail):

Fax:

Electronic mail address / Adresse electronique:

Key words describing interests (up to six):
Décrivez vos intérêts en utilisant jusqu'à six mots clés:

MEMBERSHIP DUES / COTISATION

Regular member [1] / Membre actif [1] ..... $80.00 *
US & Other .... $74.00 US

Student member [1] / Membre étudiant [1] ..... $40.00 *
US & Other .... $36.00 US

Student member - *Bulletin* only / Membre étudiant - *Bulletin* seulement ..... $20.00 *
US & Other .... $18.00 US

[1] includes *The Canadian Entomologist* and *Bulletin*
[1] incluant l'abonnement au *The Canadian Entomologist* et au *Bulletin*

Endorsement / Signature du professeur_____
Students - ask your professor to endorse form/demandez l'appui de votre professeur

MEMOIRS (including discount for members) ..... $20.00 *
MÉMOIRES (incluant l'escompte pour les membres) US & Other .... $18.00 US

* Canadian members, add 7% GST ..... $_____
* membres canadiens, ajouter 7% TPS

Total ..... $_____

If you need an official receipt please check:
Si vous désirez un reçu officiel, indiquez, s'il vous plaît: ☐

Enclose cheque or money order payable to: Entomological Society of Canada
Inclure un chèque ou mandat payable à: Société d'Entomologie du Canada

Please copy and distribute to interested non-members. Thank you.

ENTOMOLOGICAL SOCIETY OF CANADA - 1995
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA - 1995

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