

Bulletin

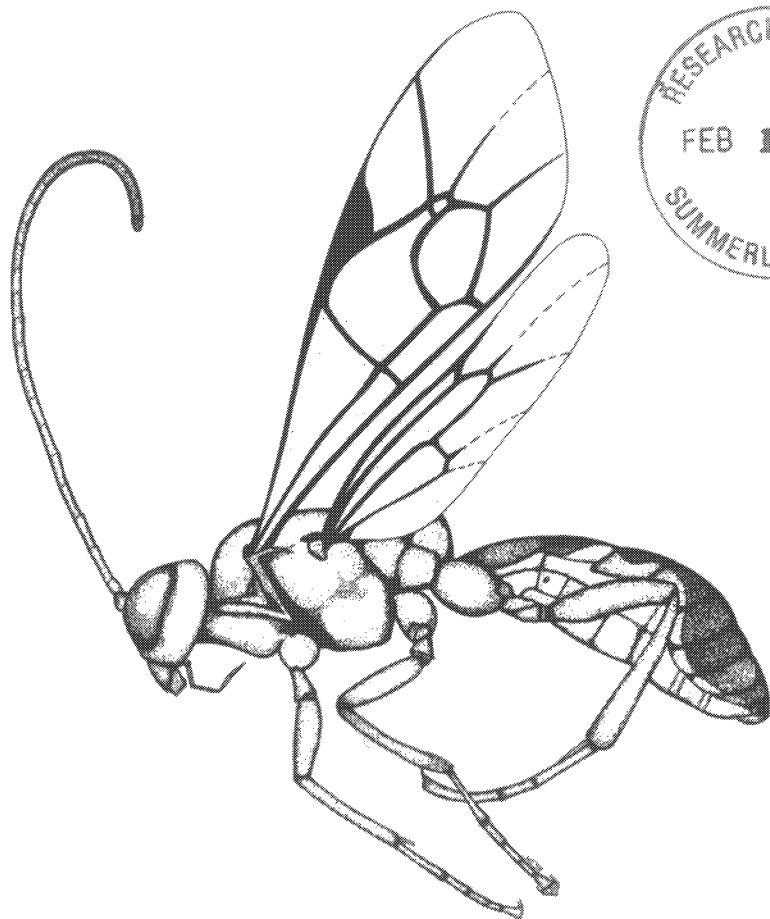
Entomological Society
of Canada

Société d'Entomologie
du Canada

Volume 28

No. 4

Dec/dec 1996



Entomological Society of Canada
Société d'Entomologie du Canada

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couverture-arrière

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The **Bulletin of the Entomological Society of Canada**, published since 1969, presents quarterly entomological news, opportunities and information, details of Society business, matters of wider scientific importance and book reviews.

Le **Bulletin de la Société d'Entomologie de Canada**, publié depuis 1969, présente trimestriellement des informations entomologiques, des occasions, des renseignements sur les opérations de la Société, des dossiers scientifiques d'importance, et des analyses d'ouvrages.

*Illustrated on the front cover is a male **Lathrolestes luteolator** (Gravenhorst) (Hymenoptera: Ichneumonidae). This parasitic wasp is known to attack the red oak leafminer [*Profenusa alumna* (MacGillivray)] and other pest insect species such as *Caliroa* spp. in eastern North America. [Habitus illustration courtesy of J. Hammond, University of Alberta, Edmonton.]*

*L'illustration de la page couverture représente un mâle **Lathrolestes luteolator** (Gravenhorst) (Hymenoptera: Ichneumonidae). Cette guêpe parasite attaque la mineuse du chêne rouge, [*Profenusa alumna* (MacGillivray)], ainsi que d'autres espèces de ravageurs du nord-est de l'Amérique du Nord, dont certaines tenthrèdes (*Caliroa* spp.). (L'illustration est une courtoisie de J. Hammond, Université d'Alberta, Edmonton.)*

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The **Entomological Society of Canada** was founded in 1863 primarily to study, advance and promote entomology. It supports entomology through publications, meetings, advocacy and other activities.

La **Société d'Entomologie du Canada** a été établie en 1863 principalement pour promouvoir l'étude et l'avancement de l'entomologie. Elle soutient l'entomologie par l'entremise de publications, de réunions et d'autres activités.

SOCIETY BUSINESS/AFFAIRES DE LA SOCIÉTÉ

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 April 19, 1997. Matters for consideration at this meeting should be sent to the secretary at the address below.

La réunion de mi-session du Conseil Exécutif aura lieu au Siège social de la Société d'entomologie du Canada le 19 avril, 1997. Veuillez faire part au secrétaire de tout sujet pouvant faire l'objet de discussion à l'une ou l'autre de ses réunions en communiquant à l'adresse suivante.

Dr. Peggy Dixon

Agriculture and Agri-Food Canada, Box 37
Mount Pearl, Newfoundland A1N 2C1
Tel: 709-772-4763; Fax: 709-772-6064
E-mail: dixonpl@nfrssj.agr.ca

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 1997** by the Secretary, Dr. Peggy Dixon

Nominations pour Deuxième Vice-Président et Directeur doivent être signées par trois membres de la Société et envoyées avant le **30 avril 1997** au secrétaire, Dr. Peggy Dixon.

New Web Page for the ESC

A Web page has been opened for items relating to the Entomological Society of Canada and can be accessed at the address below.

<http://www.biology.ualberta.ca/esc.hp/homepage.htm>

Back issues of the Canadian Entomologist and Memoirs are available from the Ottawa office and may be purchased by Mastercard or VISA as well as by cheque or money order. Current issues of the Memoirs are also for sale.

Please send all correspondence concerning
the Bulletin to:

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Bulletin Editor
Pacific Forestry Centre
506 West Burnside Road
Victoria, B.C., V8Z 1M5

Tel: (250) 363-0736; Fax: (250) 363-0775
E-mail: hbarclay@pfc.forestry.ca

Please send all correspondence concerning
Book Reviews for the Bulletin to:

Dr. Sheila Fitzpatrick
Publications Committee
Pacific Agri-Food Research Centre
6947 #7 Hwy, P.O. Box 1000
Agassiz, B.C. V0M 1A0
Tel: (604) 796-2221
Email: fitzpatrick@em.agr.ca

The deadline for submissions to be included in the next issue (Vol. **29(1)**) is **February 1, 1997**
La date limite pour recevoir vos contributions pour le prochain numéro (Vol. **29(1)**) est le **1 février 1997**

SEC Rapport du Président

L'année écoulée s'est révélée riche en défis. Tout d'abord, la revue stratégique des activités de la Société, entreprise il y a maintenant plus d'un an, a culminée au cours des derniers mois. Cette revue a touché tous les secteurs de la Société, de son fonctionnement interne aux relations que nous maintenons avec les Sociétés affiliées, en passant par une de nos activités les plus importantes soit la publication de revues scientifiques. La Société telle que nous la connaissons présentement s'est créée graduellement au cours des années et les derniers changements majeurs datent déjà de plusieurs années. Notre Société était bien adaptée au monde scientifique des années '60 et '70. Les vingt dernières années ont amené beaucoup de changements et les sociétés scientifiques n'ont pas été à l'abri de ces secousses. Le nombre de membres a diminué, reflétant une diminution du nombre de scientifiques engagés en recherche et en enseignement en biologie dans le monde occidental, la pression de publier les résultats de recherche s'est accentuée en réponse à une compétition plus sévère pour des fonds de recherche toujours plus rares, le mode même de la publication scientifique, qui semblait bien établi, change présentement avec l'arrivée de technologies qui rendent la diffusion des connaissances plus rapide et plus économique. Une société scientifique ne peut rester en arrière et doit s'adapter à ces changements. C'est ce que nous avons tenté de faire depuis 18 mois en préparant une série de recommandations visant à rejeunir notre Société.

Plusieurs dizaines de membres ont travaillé dans des sous-comités afin d'analyser les faiblesses de la Société et de proposer des solutions. Ces membres ont investi beaucoup de leur temps et je les en remercie au nom de la Société. Les divers sous-comités ont examiné la structure organisationnelle, les publications, les revenus, la gestion de notre siège social et finalement les relations avec les sociétés affiliées. Un total de 36 recommandations ont été préparées et, après discussion à la réunion du bureau de direction, la plupart vous seront présentées pour approbation. Ces recommandations changeront de façon marquée notre Société et il est fort probable qu'aucune recommandation ne fasse l'unanimité. Cependant, rappelez-vous qu'elles proviennent de sous-comités de membres qui vous présentent ce qu'ils croient être le mieux pour la Société. Il est de votre devoir de membre de faire connaître votre opinion et de voter sur ces recommandations. Gardez toutefois à l'esprit que, dans beaucoup de cas, il sera difficile de conserver le statu quo. Des solutions alternatives devront être trouvées pour les recommandations qui ne seront pas approuvées.

C'est particulièrement le cas pour la structure organisationnelle de la Société et ses publications scientifiques. Le nombre de représentants et d'élus sur le conseil d'administration a été établi à une période où la Société comptait plus de 1000 membres. Or, le nombre de membres réguliers n'est plus que d'environ 450 et les membres étudiants sont moins de 100. Autant du point de vue des coûts engendrés que de la représentativité, le conseil d'administration est trop important et plusieurs membres intéressés aux affaires de la Société se trouvent à servir sur plusieurs comités. Pour être efficace et réduire les coûts, les changements proposés sont nécessaires.

Des modifications importantes aux activités de publications scientifiques de la Société sont également proposées. Notre rôle même d'éditeur des revues a été remis en cause. Notre objectif demeure toutefois toujours le même: permettre aux manuscrits scientifiques de qualité en entomologie d'être publiés au Canada. Divers mécanismes peuvent cependant mener à cet objectif et nous vous en proposerons quelques uns.

Nous avons également remis en cause notre siège social à Ottawa. Un sous-comité a donc examiné les coûts reliés à cet immeuble (entretien, immobilisation du capital, etc..) et nos besoins comme société. Cet examen a coïncidé avec l'annonce par Agriculture et Agroalimentaire Canada que les locaux que nous utilisions pour entreposer nos inventus du *Canadian Entomologist*, des Mémoires et des autres publications de la Société, ne seraient plus disponibles. Ceci nous a donc

obligé à déménager l'ensemble de cette documentation à notre siège social qui a été aménagé pour la recevoir. Si nous vendions maintenant notre siège social, nous devrions louer un espace commercial pour loger ces documents. Ces coûts de location, alliés à la baisse du marché immobilier dans la région d'Ottawa, font que la vente du siège social représenterait une perte financière importante pour la Société. Le Conseil exécutif a donc décidé de garder le siège social et d'utiliser le sous-sol et une partie du rez-de-chaussée pour entreposer nos documents. La vente de l'immeuble sera cependant examinée régulièrement à la lumière de changements dans le marché immobilier.

L'assemblée des membres qui aura lieu à Fredericton sera donc une des assemblées les plus importantes des dernières années pour la Société. Au lendemain de cette assemblée, nous aurons à fonctionner dans une Société d'Entomologie différente qui devrait servir plus efficacement nos intérêts et ceux de l'entomologie au Canada.

Les finances de la Société, qui avaient eu tendance à être déficitaires depuis quelques années, ont maintenant repris du mieux. Nous prévoyons un léger surplus pour 1997 et les ventes du livre sur les Maladies et Insectes des Cultures Légumières ont commencé à rembourser l'avance que la Société avait consenti. Nous devrions pouvoir vendre l'ensemble de la première impression et recouvrer tout nos frais. Il restera au Conseil d'administration de la Société de décider si une seconde impression est justifiée. Nous avons cependant beaucoup appris en participant avec la Société Canadienne de Phytopathologie à cette aventure commerciale et nous serons plus efficace à l'avenir si une telle occasion se présente de nouveau.

Finalement, j'aimerais également vous annoncer que la Société d'Entomologie du Canada, la Entomological Society of America et la Société d'Entomologie du Québec tiendront une réunion conjointe en l'an 2000. Il nous a semblé approprié de tenir une réunion conjointe avec nos voisins américains pour marquer le début de ce nouveau millénaire et souligner l'importance de la collaboration internationale en sciences. La ville de Montréal a été choisie par un comité conjoint SEC/ESA et la Société d'Entomologie du Québec a accepté de se joindre à cette réunion et de participer à l'organisation locale de l'évènement. Nous espérons que cette réunion renforcera les liens que nous avons avec la ESA.

Je ne peux terminer ce rapport sans souligner le travail remarquable accompli par les fiduciaires de la Société. La secrétaire, Peggy Dixon, et le trésorier, Gary Gibson, accomplissent la plupart des tâches nécessaires au bon fonctionnement de la Société. J'ai été impressionné par leur professionnalisme et leur volonté de faire fonctionner notre Société. Au total c'est plus d'une centaine de membres qui participent au conseil exécutif, sont fiduciaires ou sont membres de différents comités. Ceci représente près de 20% du total des membres et bien que l'on reconnaisse que cette proportion est trop importante et doit être changée, on doit quand même souligner qu'il est encourageant de constater une participation si importante des membres. Il est souvent de bon ton de déplorer la baisse d'intérêt des scientifiques pour leur discipline et de blâmer les pressions résultant de la compétition pour les promotions et les subventions. Il y a sûrement du vrai dans ces affirmations mais ce problème ne touche pas une proportion importante d'entomologistes canadiens. Tout au long de mon mandat, j'ai eu à demander la collaboration de membres pour différentes raisons et dans la grande majorité des cas, leur réponse a été affirmative et même enthousiaste. En fait, même si on doit admettre qu'il est nécessaire de changer les structures de la Société d'Entomologie du Canada, j'espère que ses membres eux ne changeront pas.

Guy Boivin, Président
Société d'Entomologie du Canada
ESC President's Report

ESC President's Report

The past year brought forward a number of challenges. First, the strategic review, which started more than a year ago, has reached its conclusions during the past few months. This review has examined all aspects of the Society, from its organizational structure and the relations we have with affiliated societies, to one of the most important Society activities, the publication of scientific journals. The ESC, as we know it today, has been built gradually through the years and the last major changes to its structure occurred several years ago. Our Society was well adapted to the scientific community of the '60's and '70's but the last 20 years brought important changes. Scientific societies have not been spared by these changes. Membership has decreased, following a decrease in the number of scientists doing research and teaching in the Western societies, and the pressure to publish has become stronger in response to ever-increasing competition for research funds. Even scientific publications which had not changed much over the past 50 years, are now changing with the development of new technologies that make the transmission of information faster and cheaper. A scientific society cannot afford to stay behind and must evolve in response to these changes. This is exactly what we have tried to do in the past 18 months while we prepared a number of recommendations which should result in a more modern ESC.

Several dozen members participated in sub-committees that examined the weaknesses of the Society and proposed remedies. These members have invested much of their time and I thank them on behalf of the Society. A total of 36 recommendations has been prepared and, after examination by the Governing Board, most will be proposed to the membership. These recommendations will change our Society in several important ways and it is probable that none will be accepted unanimously; remember that they were prepared by members who are proposing what they think is best for our Society. It is your duty, as members, to let your opinion be known and to vote on these recommendations. However, keep in mind that for several recommendations the status quo is not an option and that alternatives will have to be found for recommendations that are rejected.

This is especially true for recommendations dealing with organizational structure and scientific publications. The size of the Governing Board was established at a time when the Society had more than 1000 members. Now, we have about 450 regular members and less than 100 student members. Looking at both cost and "representativeness", the Board is too large and several members interested in the affairs of the Society have to serve on several Committees. To have an efficient, less-costly Board, changes are necessary.

Important modifications to the publication activities of the Society are also proposed. Even our role as a publisher of scientific journals has been questioned. However, our objective remains the same: to have good quality entomological manuscripts published in Canada. Several approaches can be used to attain this objective and we will propose some of them to you.

We have also questioned the necessity of owning a Headquarters. A sub-committee has examined the cost of owning such a building (maintenance, capital), and our needs as a Society. This has coincided with the announcement by Agriculture and Agri-Food Canada, that the space we were using free to store the unsold copies of the *Canadian Entomologist*, the *Memoirs* and other Society publications, would no longer be available. We therefore had to move the printed material to our Headquarters, which had to be modified accordingly. If we were to sell our Headquarters, we would have to rent storage space for all these publications. These rental costs, plus the low market value of houses in the Ottawa area, meant that selling the Headquarters would result in an important financial loss. The Executive has thus decided to keep the Headquarters and store the publications on the first floor and in the basement. This issue will be re-examined regularly by the Headquarters Committee.

The general assembly that will take place at Fredericton will be one of the most important we have had for many years. When we leave Fredericton, we will have a different Entomological Society of Canada- one that should better serve both our interests and those of entomology in Canada in general.

The finances of the Society, which have been in a deficit situation for the past few years, are now in better shape. We forecast a slight surplus in 1997, and the book on the Diseases and Insects of Vegetable Crops is selling well. We should be able to sell the first printing of the book and recover our investment. It will be up to the Governing Board to decide if a second printing is worthwhile. We have learned a great deal in this commercial venture with the Canadian Phytopathological Society and we should be able to do better next time.

Finally, I would like to announce a joint meeting between the Entomological Society of Canada, the Entomological Society of America and the Société d'Entomologie du Québec in the year 2000. It seemed appropriate to hold such a joint meeting with ESA at the beginning of the next millennium to underline the importance of international collaboration in science. The City of Montréal was chosen by a joint ESC/ESA committee and the Société d'Entomologie du Québec has agreed to participate in this meeting and be the local organizer. We hope this meeting will strengthen the links we have with the Entomological Society of America.

I would not want to go without mentioning the remarkable collaboration I have received from Society Trustees. The Secretary, Peggy Dixon, and our Treasurer, Gary Gibson, have been very efficient in maintaining the Society in working order and I have been impressed by their hard work and their professionalism. A total of more than 100 members participate in the life of the Society either on the Governing Board, as Trustees or as members of the different Committees. This represents close to 20% of the membership and while we recognize that this is too high a proportion we must also stress that it is encouraging to witness this level of participation. We often hear that scientists are too busy publishing or writing grants to participate in scientific societies and while this may bear some truth, it is certainly not the case for the majority of Canadian entomologists. Throughout my mandate I have had to ask for collaboration from numerous members on different occasions and in the majority of cases my requests were answered both positively and with enthusiasm. In fact, although I stress that it is important that our Society change, I hope also that its members will remain as they are.

Guy Boivin, President
Entomological Society of Canada

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 1997**. They should be sent in an envelope marked "Confidential" to:

G.G.E. Scudder, University of British Columbia
Department of Zoology, 6270 University Blvd.
Vancouver, B.C. V6T 1Z4

New Fellow of the ESC

Dr. George Gerber of the Department of Agriculture and Agri-Food Canada in Winnipeg has been elected a Fellow of the Entomological Society of Canada. Dr. Gerber works with insect pests of canola and is a recent past-president of the ESC.

New Scientific Editor in 1998

The Executive Council is soliciting the names of persons willing to serve as Scientific Editor for the Canadian Entomologist beginning January 1, 1998. The Scientific Editor is responsible for the publication of the Canadian Entomologist and for receiving, editing, assigning to reviewers and making judgements of acceptability of scientific manuscripts relating to the field of Entomology in general. The position requires (i) access (and employer's permission) to use photocopying, phone, fax, computer and mail services; (ii) proficiency in wordprocessing; (iii) a working knowledge of desktop publishing; (iv) a comprehensive knowledge of entomology and a knowledge of current research and researchers in the field. A working knowledge of both official languages is a desirable attribute. Persons willing to submit their names for consideration for this position should send a statement of their qualifications by June 1, 1997, to:

Dr. Sheila Fitzpatrick, Agriculture Canada
Aggasiz Experimental Station, Aggasiz, B.C.

Un nouvel Éditeur scientifique en 1998

Le Conseil Exécutif sollicite les noms de personnes intéressées à devenir Éditeur scientifique du Canadian Entomologist à compter du 1er Janvier 1998. L'Éditeur scientifique est responsable de la publication du Canadian Entomologist, de la réception, de la correction et de la transmission des textes aux réviseurs et doit passer jugement sur l'acceptabilité des manuscrits scientifiques liés au domaine de l'entomologie en général. Le poste exige (i) d'avoir accès (avec la permission de l'employeur) à un photocopieur, un téléphone, un télécopieur, un ordinateur ainsi que des services postaux; (ii) savoir faire de l'édition électronique et (iv) connaître l'état actuel de la recherche dans le domaine de l'entomologie ainsi que des chercheurs qui y sont impliqués. La connaissance des deux langues officielles serait une qualité souhaitable. Les personnes intéressées à soumettre leur candidature peuvent envoyer un énoncé de qualité, d'ici le 1er Juin 1997, à:

Dr. Sheila Fitzpatrick, Agriculture Canada
Aggasiz Experimental Station, Aggasiz, B. C.

Student Affairs Committee Update

The ESC-AES meeting in Fredericton was very successful, and it was great to meet with Student Members from the other parts of the country.

The composition of the 1996-1997 Student Affairs Committee (SAC) is as follows: Troy Danyk, Chair (Simon Fraser University); Amanda Chau (Simon Fraser University); Laura Hooper (Memorial University of Newfoundland); Paul Lomic (University of Toronto); Lloyd Jeffs (University of Saskatchewan); Eric Lucas (Université Laval). Claude Godin will act as entomology survey advisor.

As a result of the Strategic Review, there are a number of changes to the Society. We feel that they will benefit Student Members and the Society as a whole. Some of the changes that

directly affect Student Members are as follows:

1. All scholarships offered by the ESC are open to Student Members only. Previously, it was possible for a non-member to win a Postgraduate Award.

2. The Scholarship and Graduate Research-Travel Grants Committees were combined to form the Student Awards Committee. Scholarship applications will be assessed by one committee, streamlining the process.

3. The responsibility of scholarship fund raising was to be removed from the Student Awards Committee, but apparently not transferred to any other Committee. The SAC stressed the need for active pursuit of scholarship funds, given the reduction in funding of basic research across the country. Responsibility of scholarship fund raising was transferred to the Marketing Committee. We thought that the issue of declining research funding opportunities was an important enough issue to recommend to the Board that the Marketing Committee should "solicit the corporate sector for funds to establish new scholarships that would be available to Student Members."

4. The only loss that Student Members incurred was in the size of the SAC, which was reduced from five to four members. However, members of the Board stressed that the reduction does not impose a restriction on the number of people that can contribute to the SAC; the Chair of the SAC (or any other committee, for that matter) can involve as many people as he/she wishes.

We are working on the survey of entomology education in Canada. Board members offered a number of helpful suggestions that should make our job a bit easier. In addition, the Board supports publication of the results of the survey in a future issue of the Bulletin, and in the ESC WWW home page. If you know of colleges or universities that have programs that have a significant focus on entomology, let us know!

If you have an issue that may be of interest to the SAC, contact me at: Agriculture and Agri-Food Canada, Lethbridge Research Centre, PO Box 3000, Lethbridge, AB, T1J 4B1, Canada; e-mail danyk@em.agr.ca; fax 403-382-3156; phone 403-327-4591, extension 462. The e-mail address of the SAC is: esc-student@sfu.ca.

Troy Danyk, Chair
Student Affairs Committee
Lethbridge, Alberta

Joint Meeting of the Entomological Society of Alberta and the ESC

October 4-8, 1997, in Edmonton, Alberta at the Crowne Plaza Hotel.

The general theme for the meeting is "Insects and Mother Earth". Symposia being planned so far are "Biodiversity: Where Do We Go from Here?", and "Impacts of Herbivorous Insects". Members with ideas for additional workshops or symposia may contact John Spence or Jan Volney.

Edmonton has a beautiful system of interconnected parks in the river valley, within walking distance of the Crowne Plaza Hotel. Depending on interest, tours will be arranged of some of the other highlights and shopping areas in Edmonton, as well as of nearby Elk Island National Park and the Ukrainian Cultural Village.

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

For more information, please contact: Dr. Bruce Heming, General Chair, ESC/ESA Organizing

Committee, Dept. of Biological Sciences, University of Alberta, Edmonton, AB T6G 2E9, Tel.: (403)-492-4173, Fax.: (403)-492-9234, Email: BHEMING@GPU.SRV.UALBERTA.CA

Dr. John Spence, Co-Chair, Scientific Committee, Dept. of Biological Sciences, University of Alberta, Edmonton, AB T6G 2E9, Tel.: (403)-492-3003, Fax.: (403)-492-9234, Email: JSPENCE@GPU.SRV.UALBERTA.CA

Dr. Jan Volney, Co-Chair, Scientific Committee, Canadian Forest Service, Northwest Region, Northern Forestry Centre, 5320-122 St., Edmonton, AB T6H 3S5, Tel.: (403)-435-7329, Fax.: (403)-435-7359, Email: JVOLNEY@NOFC.FORESTRY.CA

Report of the Elections Committee

The successful candidates for the three categories considered are as follows:

Second Vice President:	Dr. Linda Gilkeson
Directors-at-Large:	Drs. Lloyd Dosdall and John Spence
Fellowships:	Drs. George Gerber and Bernie Roitberg

J.E. Corrigan

Report of the ESC-AES 1996 Joint Annual Meeting Committee

The meeting was a success, with more than 200 participants, 13 invited symposium papers in 3 symposia, 91 submitted papers or posters, and over 40 presentations in 6 workshops. There were 29 student papers. Although it looked like we were going to run a deficit up to one week before the meeting, we ended up with a surplus of about \$1850, due mainly to a large number of people (nearly half of total registrants) registering on-site. Press coverage was surprisingly extensive with articles appearing in the Globe & Mail and CBC radio as well as in local newspapers. I would like to thank the members of the organizing committee and all those who attended the meeting for helping to make it a successful scientific and social event.

Jon Sweeney
General Chair
ESC-AES 1996

Treasurer's Report

The Society finished the year 1995 with a financial surplus of \$24,163, though this surplus resulted largely because of the absence of Memoir publications. The surplus enabled an increase in societal investments for the first time in several years. This was offset by a substantial portion of investments maturing, with subsequent reinvestment at much lower current interest rates.

The Society appears to have regained financial stability and health. Another small operating surplus of \$8,800 is budgeted for 1997. Also budgeted is net income of \$17,500 from sales of the French and English versions of Diseases and Pests of Vegetable Crops in Canada. A joint audit of DPVCC finances with the Canadian Phytopathological Society is planned in conjunction with the regular 1996 ESC financial audit in order to ensure equitable distribution of proceeds. Disbursements are currently being made to both Societies based on records maintained by the ESC. At current rates of sale we expect another 6-8 years will be needed to sell all the inventory, and ultimately net the Society a profit of only \$9,000. We currently absorb a net loss on shipping and handling fees for distributing the book to customers and an increase in charges is recommended.

The Society obtained the ability to accept membership fees and other payments by VISA or MASTERCARD in 1996, which hopefully will be a service to members and assist marketing outside of Canada.

Gary Gibson
Ottawa, Canada

ESC Finance Committee Report

Three possible budgets were discussed for 1997: (1) status quo, with publications, (2) without publications (the Can. Ent. and Memoirs being handled by NRC), and (3) with publications, but with the Can. Ent. and Memoirs handled by Allen Press, Lawrence, KS (which is the largest printing operation in North America specializing in scientific journals).

At least three things have changed over the past year or two.

(1) Before 1995, the ESC annually published three or four Memoirs, sometimes more, but during 1995 no Memoir was published and only one each is scheduled for 1996 and 1997. Subscribers are concerned that they are paying for Memoirs without receiving the usual number. One can argue that the reduced number of Memoirs is offset by the fact that subscription prices have remained unchanged since 1993. It must also be kept in mind that we receive the same amount from subscribers whether we publish one or four Memoirs and page charges alone do not cover the cost of the Memoirs. The prices below do not include GST. The percentages shown represent increases from previous prices.

	Canada	US	Foreign
1983	\$70	\$70	\$70
1984-1988	85 (17.6%)	90 (22.2%)	95 (26.3%)
1989-1992	170 (50.0%)	180 (50.0%)	190 (50.0%)
1993-	175 (2.9%)	190 (5.3%)	200 (5.0%)

(2) Most memoirs originate from the biosystematic unit and cutbacks have forced the government to seek alternate methods of publications.

(3) The general trend recently is to produce more specialty journals rather than general ones, such as the Can. Ent. A Memoir could be a regular or special issue of the Can. Ent. instead of a separate series, but this might "delay" regular manuscripts for the Can. Ent., if a special issue it means a different number of issues per year; and it would increase the cost of productivity, but would not bring in more funds as page charges do not cover the cost of publication. One option suggested by the Strategic Review was publication by a small (two-man operation) printing company in southern Ontario, however, the FC did not think this was a suitable solution. With a small operation, quality and continuity are concerns. The FC agrees that it is desirable to have a Canadian printer and it is handy to have one on the same city as the ESC office, however, two Ottawa members of the FC have had experience with Allen Press and did not find the distance any great disadvantage.

Since one major expense of the ESC operation is the salary of the managing editor, the Executive of the Governing Board may wish to renegotiate the salary based on absence of Memoirs and reduced Can. Ent. publication.

All things considered, the FC recommends that the Executive renegotiate with the managing editor. If a satisfactory solution cannot be found then the FC recommends contracting out with Allen Press.

Edward C. Becker

Student Affairs Committee, Annual Report

I assumed the position of Chair of the Student Affairs Committee (SAC) at the Joint Annual Meeting of the ESC and ESBC in October 1995. With the exception of myself, all members of the SAC were new, and were as follows: Troy Danyk, Chair (Simon Fraser University), Amanda Chau (Simon Fraser University), Claude Godin (Macdonald College), Lloyd Jeffs (University of Saskatchewan), Eric Lucas (Université Laval); Sherah Vanlaerhoven (Simon Fraser University) acted as advisor.

An internet discussion group was established at Simon Fraser University, and used effectively to conduct Committee business.

The SAC reviewed all of the reports from the Subcommittees of the Strategic Review Committee. The purpose of our review was to determine the effect that the proposed recommendations may have on Student Members and the Society as a whole. I submitted reports to the respective Subcommittees, and Chair of the Strategic Review Committee, that contained the comments from the SAC about each recommendation.

The SAC coordinated the "share-a-room" program for Joint Meeting of the ESC and AES in Fredericton. The program was open to all Members of the Society, and application forms were published in the Bulletin. Translation of the revised version of the English form was performed by Claude Godin.

Work began on the survey of entomology education/training in Canada. We felt that a survey was needed because there does not appear to be a single source of detailed information about entomology training in Canada. The survey will provide students (and other interested parties) with a concise summary of the state of entomology training in Canada.

Notices of graduate study and job vacancies in entomology were collected and published in the Bulletin. I solicited for position announcements through the internet discussion group, entomo-1. As a result, about 20% of the announcements printed were sent to me directly for publication.

Recommendations to the Board:

1. The SAC would like the committee responsible for student awards to solicit the industry and corporate sectors for funds to establish new scholarships that would be available to Student Members of the ESC.

2. The SAC would like the ESC to publish the results of the survey on entomology (being conducted by the SAC) in the Bulletin and on the ESC home page.

Troy Danyk, Chair
Student Affairs Committee
SFU, Burnaby

Report of the Scientific Editor - *Canadian Entomologist*

So far, since the end of September 1995, I have processed over 121 manuscripts. The team of Associate Editors has done legion work in trying, and mostly succeeding in quick turn-around of manuscripts, review, and so on. Nevertheless, there have been some hiccups, as usual. In fact, it seems that there has been greater difficulty in obtaining expeditious reviews this year. I suspect that reflects the diminishing number of entomologists and the additional work that they have now to do. Further, morale in many institutions is rather low so incentive to assist others may have suf-

ferred. The upshot of the review process suggests a decline in the quality of manuscripts submitted, not from the viewpoint of the science include so much, but that is a factor contributing to the higher rate of rejection than in the past, but in the quality of presentation.

My policy on dating manuscripts remains as follows: Date of Receipt (obvious). Date of Acceptance is given for papers which require no change or minor revisions at the time I return the material to the author(s). For submissions requiring major revisions, Date of Acceptance is given at the time that the comments of reviewers have all been answered. Sometimes, I return such revised manuscripts to the Associate Editors for their call as to whether or not re-review is needed. Needless to say, submissions falling into the final category take a long time to move through the system. My absences, especially during the latter part of the summer, contributed to delays which became unavoidable as a result of the unexpected need to change my Assistant at that time.

The Table below presents a comparison of the categories into which papers have fallen during the first year of my editorship versus in the last 12 months:

	1994	1996
Acceptance with minor revision:	46%	16%
Major Revisions needed:	42%	64%*
Rejected:	14%	20%

*of these in 1996, 48% needed revisions but not re-review, but 52% were returned from my Associate Editors as needing their further scrutiny or complete re-review.

Last year interest was expressed in the numbers of foreign and Canadian authors of submitted papers. The following is a run-down. Of 75 first or only authors, 65% are Canadian, 19% American (USA), and the rest (16%) from all over the world (Argentina, Algeria, Australia, Austria, China, France, Japan, Mexico, Spain, and U.K.). For 97 co-authors, 61% are Canadian, 23% American (USA) with additionally Indonesia represented among the co-authors.

All the Associate Editors are on E-mail and networking with them is facilitating the exchange of information, opinion, and news. This is working very well. The slate of Associate Editors has changed since I took office. The most recent change will come about from the recent retirement of John Cunningham. A replacement for him in the area of insect pathology is needed. We also need another Associate Editor in the area of crop entomology. The appointment of Associate Editors by the Scientific Editor has made little difference in editorial operations.

From time to time, I engage the hourly help of an Assistant Editor. This year Anne-Marie Roussy has been a great help, but is now improving her Darwinian fitness. Kym Welstead has started to assist as of mid-September.

A rough calculation of the cost of handling a manuscript from the Scientific Editor's office is \$15.00 per manuscript. This includes all communications with authors, Associate Editors, and the Technical Editor. I can not keep track of the actual costs because of the amount of time and bookkeeping that would entail. The amount of \$15.00 per manuscript received by the University of Guelph seems to be about right and in line with the costs used by other journal editors in Canada.

I have announced my intention to resign as Scientific Editor as of December 31, 1997.

Peter Kevan, Scientific Editor
The Canadian Entomologist

Report of the Scientific Editor - *Memoirs*

As of September 1996 most of the contributions to a *Memoir* on 'Microbial Control of Grasshoppers and Locusts', edited by M.S. Goettel and D. Johnson, have been accepted for publication. A few remaining contributions are in review, and hopefully this *Memoir* will be in press later this Fall. One *Memoir* (no. 170) will appear in 1996, probably later this Fall. Unfortunately, there are no other submissions to the *Memoirs* to report at this time.

My thanks to the anonymous reviewers, who have given their time and expertise, and finally, and especially, thanks to Barbara Patterson and Sandy Devine for their help, patience, and cheerfulness.

Valerie Behan-Pelletier
Scientific Editor, *Memoirs*

Report of the *Bulletin* Editor

The March, June and September issues of the *Bulletin* were published. Certain changes of style were instituted this year as well as changes in cover colour and in page size of the *Bulletin* to conform to the other two publications. This latter has led to the investigation of costs of various page sizes, however, and it seems that modest changes in page size from the present size would be associated with about a 30% saving, so the page size may change again.

Hugh Barclay
Bulletin Editor

Report of the Science Policy Committee

Two items came to the attention of the Science Policy Committee during 1996, the most important of which is the current NSERC reallocations exercise. Since many of our members carry out NSERC-funded research, we should be concerned that up to 10% of the total funding or the Research Grants Program will be redistributed in response to submissions from the various disciplines. The Science Policy Committee has notified NSERC of our interest in having input into defining and defending our research community, and draft documents are currently circulating around the Committee. Information on the reallocations process can be found on the Web at <http://www.nserc.ca/programs/reall>.

The Science Policy Committee has also prepared a draft response to an open letter from the Minister of the Environment, Sergio Marchi, in which he has offered to compile and publish all of the "biodiversity projects and activities" submitted to him between environment week '96 and environment week '97. This certainly seems like a good opportunity to emphasize the great contributions our membership had made to the study of "biodiversity"!

Steve Marshall

Report of the ESC Marketing Committee

Results of the marketing survey (see the Bulletin, Vol. 27(4):227) distributed in 1995 have been analyzed. Complete details were provided to the Executive at the mid-term meeting in 1996. Each of the 45 respondents supported the sale of items with an entomological theme by the Society. In descending order, the most popular items were: i) T-shirts with line-drawings of insects, ii) ceramic mugs with colour photographs of insects, and iii) calendars. Forty-one respondents supported the hosting of a slide competition at annual meetings. Names of 9 volunteers to help with such an event were forwarded to the Executive.

The Committee is working with Ms. Alexandra Devine at ESC headquarters to produce brochures listing titles and prices of past issues of "Memoirs". The "Memoirs" have been subdivided into five categories, one category will be promoted in each brochure. The categories are: Hymenoptera (32 issues), Coleoptera (33 issues), Lepidoptera (35 issues), Diptera/Heteroptera (31 issues), and Miscellaneous Topics/Orders (38 issues). Completion of these brochures is anticipated in 1997.

Marketing of the book "Diseases and Pests of Vegetable Crops in Canada" continues through the efforts of the joint CPS/ESC Marketing Committee for DPVCC. Of the 4,500 copies printed, 2,667 copies either have been sold or ordered as of August 28, 1996: (hardcover English - 282 copies [sold out]; hardcover French - 201 copies; softcover English 1,906 copies; softcover French - 278 copies). All copies of DPVCC must be sold for CPS and ESC to recover all costs associated with publication of this book. Hence, Society members are encouraged to promote the sale of DPVCC through word-of-mouth advertising. This book would be an ideal gift for your gardening friends.

K. Floate (Chair)
J.D. Shorthouse
R. Westwood

ESC Membership Committee

1. An accurate count of membership to the ESC is not available at this time. Membership as of April 30, 1995 stood at 428 Regular, 91 Students, 8 Honorary, and 76 Emeritus. An up-to-date listing of the membership will be provided with the interim report next spring.
2. The preparation of an accurate and informative membership list is continuing. Jeff Stewart will work the ESC Administrative Assistant to produce the membership list for sale to ESC members.
3. One formal nomination and one inquiry about a nomination for Honorary Membership was received. However, due to the quota on the number of Honorary Memberships awarded by the Society, none were available this year.
4. Initiatives for 1996/1997 include but are not limited to:
 - a. revision and distribution of ESC leaflets to universities and regional societies,
 - and
 - b. completion of the membership list on diskette.
5. A listing of Committee members for 1996/1997 will be forwarded after a response from all regional societies is received.

Jeff Stewart

Report Of The Publications Committee

The following items were dealt with during 1995-1996:

1. *Instructions to Authors:* Changes were made to inform those submitting manuscripts that the Society has copyright on our journals as a whole but that each author retains copyright for his/her own article.
2. *The Journals:* Information on the back cover of The Canadian Entomologist has been changed to read that it has six issues yearly rather than being issued bi-monthly.

The re-designed covers are now in place for The Canadian Entomologist and the Bulletin, including the copyright symbol. The first cover drawing was provided by Jim Hammond, University of Alberta. The Managing Editor has 15 other habitus drawings ready for use in the future.

It was agreed that when a submitted paper contains "extras" (tables, figures, etc.) that exceed 40% of its length, the author(s) would be charged for those extras at the rate the Society is charged. This policy has not been applied uniformly in recent years. The Committee has instructed the Managing Editor that charges for such "extras" should be made.

3. *Scientific Notes:* The Committee discussed the problem of length of Scientific Notes and concluded that we should strictly enforce our rules and that no changes to present regulations were needed. The Committee informed the Managing Editor and Scientific Editor that Notes shall be NO LONGER than two printed pages (i.e., five double-spaced typescript pages of text or three manuscript pages of text plus one page of table or figure) and that submissions longer than this should be returned to the author.

4. *Mailing List for the Bulletin:* Ms. Sandy Devine brought to the attention of the Committee that considerable savings could be made (about \$7000. per year) if the Bulletin was not sent to institutional members (libraries, etc.). Committee members discussed this option for some time and requested input from outside sources (librarians). Finally, the Committee recommends against this procedure. We feel that all members, institutional and individual, should be treated alike.

5. *Other Items:* Several books have been received and sent to interested scientists to review for the Bulletin. A few people do not seem to regard reviewing books as a priority on their time and in spite of repeated reminders never seem to get around to doing the job. Next year's Committee will have a few of these delinquents to handle. One application for a page charge waiver was received and rejected. One C.P. Alexander Fund paper was accepted for publication during the past year. Authored by Dr. M. Mackauer, the paper dealt with host choices by aphidiid wasps.

North Carolina State Univ. Water Quality Group requested permission to use abstracts and citations from The Canadian Entomologist as part of a database they intend to make available via the World Wide Web. The Committee, led by Dr. Fitzpatrick, recommends that we give this permission but that approval should be granted by the Governing Board. Once granted, the form letter from NCSU should be signed by the President and returned in the envelope provided. This form and envelope, and the correspondence are in the Publication Committee files under "Copyright/Bulletin/Forum."

In closing I wish to express my sincere thanks to all members of the Publications Committee: the appointed members, Drs. Cloutier, Eidt, Fitzpatrick, Keddlé, and Mason and those ex officio (Drs. Barclay, Behan-Pelletier, Boivin, and Kevan and Ms. Patterson) are all knowledgeable people and have been most helpful.

Respectfully submitted
Al B. Ewen, Chair

Report of the Bilingualism committee:

The committee has only received a few texts for translation during the past year: (i) the President's Message from past president Safranyik, (ii) a short note concerning membership invoices and (iii) the biographies of the candidates for ESC elections 1996. Changes made to the "Standing Rules" and "Guidelines" have been translated and the corrected version sent to secre-

tary Dixon. All translations have been done by members of the committee so there have been no charges for the Society. I recommend that the \$500.00 annual budget for this committee be maintained, just in case the Society has extensive material for translation necessitating a professional translation service.

Johanne Delisle, Chair
Bilingualism committee

Annual Report of the Scholarship Committee

There were nine eligible 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 1996 are M. Patrice Bouchard from Macdonald Campus of McGill University at Ste-Anne-de-Bellevue, Quebec, working on a survey of the arthropods of alvars on Manitoulin Island, and Ms. Heather Garnett from Mount Allison University in Sackville, New Brunswick, working on aquatic invertebrates and fungi on leaf detritus in a freshwater stream.

I would like to thank the members of the Scholarship Committee who had the difficult job of rating the applications: Rene Alfaro, Staffan Lindgren, Bev Mitchell, John Conroy, Gord Surgeoner, Conrad Cloutier, Dan Quiring, and Guy Boivin.

At the April Executive Committee meeting it was decided that membership in the Entomological Society of Canada be a prerequisite for candidates applying for Post Graduate Scholarships, as is presently the case for Travel Grants. This change will be ratified at the annual governing board meeting in October.

Juliana J. Soroka, Chair
Scholarship Committee
Saskatoon, Sask

Report of Insect Common Names

Archival Database - I made some corrections to the names in the Archival database and added many more footnotes. I would like to thank the following: Dr. Brodeur of the SEQ for help with some french common names; and Dr. Zhang of CABI, Dr. Bosik, Chair of the ESA Common Names Committee, and Drs. Bob Carlson and Bob Robbins of BIOTA for their help in updating some scientific names.

Minutes of the 1996 Executive Council Meeting - Following Recommendation (9.2.16) I sent a copy of the ESC's Archival Database of insect common names to CABI. Dr. Bin-Cheng Zhang acknowledged its safe arrival and will send a yearly Report, in October, about any of the scientific names that have changed or differ from those on the ANI database. In 1995 CABI reviewed the official ESC Common Names Disk in the Review of Agricultural Entomology, 83 #12:1421. Regarding item 8.3 of the Minutes, "ESA request for a joint common names list" (Project 2000). Dr. Bosik emailed me on 14 May that "At this time I do not believe we have the support to combine both lists".

Sales of the ESC Common Names Disk - On 5 June, Alexandra Devine informed me that of the original supply of 3.5" diskettes less than 20 remained and requested more of this size. No more 5.25" diskettes are needed as only 2 have been sold. I sent Peter Kevan an updated version of the disk and he will make her a new supply of the small diskettes. The new version has the 1995 Corrections and Additions (ESC Bull 27(3): 123) plus a few more changes made this year. The 1996 corrections have been submitted to the Bulletin and emailed to the Registered disk owners (all 4 of them!)

French Version of Common Names List - On 13 June Dr. Mailloux of the SEQ sent me a printout of Noms Communs des Insectes au Canada. The 1995 corrections have been incorporated and a new title page acknowledges the ESC's role. There is a notice on p.ii with information about how to obtain our "electronic version" which enables the list to be sorted in several ways.

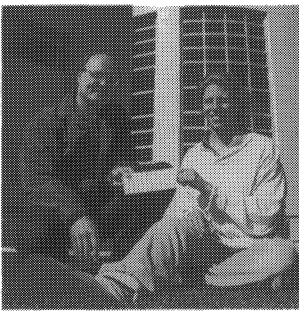
Final Report of the Strategic Review Committee - I agree with the recommendation that the number of members of the ICNC be reduced. In fact, I think it could be reduced to three : the Chair plus an anglophone and a francophone. I also agree that mandatory membership by the Provincial Societies be dropped. I suggest, however, that they are encouraged to inform ESC Incoming Presidents (who elect the Committee) of any enthusiastic volunteers who would make good ICNC members.

E.M. Belton
Director-at-large, ESC

Report of the Research-Travel Grants Committee

In 1996 there were three applications received for the Research-Travel Grants available from the Entomological Society of Canada. The committee evaluated the three proposals and it was decided that two of the candidates were deserving of grants. These were awarded to Ms. Lynn Rocchini and Mr. Jeff Lemieux.

Ms Lynn Rocchini



Ms. Rocchini was awarded \$1500.00 to travel to Berkeley, California to obtain experience in the use of a new analytical technique used by Dr. Nancy G. Rappaport, an entomologist, and Dr. Haiganoush K. Preisler, a statistician, of the United States Department of Agriculture Forest Service.

Mr. Jeff Lemieux

Mr. Lemieux was awarded \$1405.00 to travel to the lab of Dr. John Spence of the University of Alberta in Edmonton. Mr. Lemieux planned to do his travel at the end



of April or beginning of May while Ms. Rocchini planned her travel for early October.

Some problems were encountered in notifying students of the availability of the Research Travel Grants this year. This was solved by making contact with the student representatives for the ESC and getting the word out through that source. We were, however, several months late in awarding the two grants. As a result of this Ms. Rocchini was awarded a grant but was unable to fulfill her plans for the original proposal as the course she planned to attend had already started. She submitted an alternate proposal which was accepted by the committee members.

The 1996 Research-Travel Grants Committee consisted of: Drs. Wade Bowers, Daniel Coderre, David Langer, B.K. Mitchell, Imre Otvos, Terry Wheeler, Guy Boivin (ex-officio), and Mr. Lloyd Hollett (chairperson)

The committee members are to be commended on the excellent job they did 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

Achievement Awards Committee

The Committee recommended that the 1996 Gold Medal be awarded to Dr. Jarmila Kukalova-Peck, and that the 1996 C. Gordon Hewitt Award be awarded to Dr. Tim Lysyk.

The Committee noted that disappointingly few nominations were received. The Committee recommended to the Governing Board that each year the Nominations Committee (but not the Awards Committee, in order to keep the roles distinct) should actively seek nominators of worthy candidates.

The ESC's Committee Guidelines for the Achievement Awards Committee require that members not have served previously. In order to avoid depriving the Society indefinitely of the good judgement of experienced members, the Committee recommended that the guidelines be changed to require a restriction to service "no more than once in any four-year period."

H.V. Danks
1996 Chair

Fellowship Committee Report

The Fellowship Committee received nominations, circulated all written materials, voted in writing and made its nomination to the Governing Board in March 1996 in time for the mid-term meeting of the Executive Council. The latter ratified the nomination of Dr. George Gerber.

To facilitate the nomination process in future, the next Fellowship Committee, should consider recommending to the Governing Board that all nominations be considered valid for three years. The Committee could easily maintain a rolling list of nominated candidates, with expiry dates. At present nominations are valid for one year only.

G.G.E. Scudder

Report of the Endangered Species Committee

1996 saw continued growth of public interest in Endangered Species at the same time as resources available for the study of endangered species seem to have diminished. The CWS Endangered Plants and Invertebrates of Canada program (EPIC), which initially drew heavily on the resources of this committee, has had its funding cut, and now seems to exist primarily through the CNF Lady beetle survey (a project suggested to EPIC by the chair of this committee). Various members of our committee had input into the public review of the proposed endangered species legislation and the Environment Canada's publication "Report on Public Consultation: A national approach to endangered species conservation in Canada". Information on this site and other current Federal initiatives is now available on the World Wide Web.

Several publications have come out dealing with endangered species in the United States, including a list of endangered, threatened, special concern and rare insects of United States (published by the Young Entomologist's Society). No such publication exists for Canadian Insects, and an earlier initiative of this committee to organise a database on potentially rare and endangered insects of Canada was dropped due to vehement opposition from one influential member of the ESC.

Although the Endangered Species Committee has done very little this year as a committee, individual members of the committee have "carried the torch". Especially noteworthy are committee member efforts in British Columbia, some of which are summarized in: Scudder, G.G.E. 1996. Terrestrial and Freshwater Invertebrates of British Columbia: Priorities for

Inventory and Descriptive Research. Res. Br. B.C. Min. For. And Wildl. Br. Min. Environ., Lands and Parks, Victoria, B.C. Pap. 09/1996:206 pp. Dr. Scudder also reports that the B.C. Conservation Data Centre funded inventory work on rare dragonflies this year, and the B.C. Min. Of Environ. Lands and Parks, in cooperation with Forest Renewal British Columbia, also funded inventory work in the South Okanagan and Similkameen Valleys of British Columbia. Dr. Galloway reports that the Manitoba Conservation Data Centre has been involved with studies of rare and endangered butterflies and tiger beetles, and that he has presented data on the lice and fleas associated with rare and endangered birds and mammals in Canada.

There is clearly a great deal of activity relevant to rare or endangered insects in Canada, but in the absence of a national initiative, such as developing a rare insect database or representing the Society with input into new legislation, there is probably no justification for the continued existence of this committee. Unless someone comes forward wishing to chair and champion the committee, I recommend that it be discontinued, as recommended by the current Strategic Review.

S. Marshall

Public Education Committee

Each regional entomological society is eligible to apply to the Public Education Committee for an annual grant of \$200.00 to promote public education. The committee has received and approved applications for this grant from the Entomological Society of Saskatchewan to purchase the materials required for making a stand-alone display for school presentations, and from the Acadian Entomological Society to purchase display cases for educational activities.

Lloyd M. Dosdall
Vegreville, Alberta

Heritage Committee Report

The Committee. Currently, Paul Riegert, Doug Eidt and Colin Wood are the other members. We invite anyone with interest to join, particularly residents of Quebec and Ontario.

The project to compile a list of ESC officers since the Society's founding is stalled, but information continues to flow to us, particularly with regard to accuracy and verification of names, dates etc. Most recently, Ed Becker and the Hon. Librarian of the ESO have helped us fill in some blanks. I expect we might have the first draft ready for review by early winter.

Archiving Personal Papers of Eminent Canadian Entomologists. We were quite disappointed that not a single member of the ESC Executive could provide a response to our previous requests. At this time, our member Doug Eidt is exploring the possibility of collecting and offering the papers of Dr. R.E. Balch.

Any suggestions and advice for the Heritage Committee would be appreciated.

R.F. DeBoo, Chair
ESC Heritage Committee

Comité du site WWW: Rapport annuel 1996

Ce comité ad hoc a été créé afin d'examiner les avantages et coûts associés à la création et au maintien d'un site WWW sur Internet et de créer une première version d'un tel site. Le travail de ce comité a surtout été marqué par des problèmes techniques de transfert de données et de

changements de systèmes informatiques.

Bev Mitchell a obtenu de l'Université d'Alberta que notre page WWW réside sur l'ordinateur de l'université (probablement pour une période d'environ deux ans). Cette période devrait nous permettre de juger de l'impact d'une page web. David Blades a préparé quelques pages d'information pour un site de démonstration. Nous pourrions ainsi avoir un site temporaire qui sera modifié selon les besoins.

A la fin septembre, Bev Mitchell se proposait d'ouvrir le site dès que le contenu des pages lui serait transmis. De son côté, David Blades terminait de monter ces pages. Le site WWW devrait donc être ouvert d'ici peu, malheureusement trop tard pour la réunion annuelle. La mise en place et la maintenance de cette page sur le serveur de l'Université d'Alberta se feront sans coût pour la SEC. Cependant, les données sur le temps de travail investi et le temps d'ordinateur engagé nous permettront d'estimer les coûts associés au maintien d'une page WWW. Nous recommandons que la mise à jour régulière d'une telle page soit confiée à un comité de la Société qui verra à inclure l'information pertinente.

Le comité scientifique de la Commission Biologique du Canada a également discuté de la possibilité de créer un site WWW qui sera probablement lié à celui de la SEC. Une page est actuellement en préparation par l'AEAQ (Association des Entomologistes Amateurs de Québec) et une autre le sera prochainement par la SEQ. Ces sites devraient également être liés au site de la SEC. Nous pouvons envisager que le site de la SEC servira de porte d'entrée à plusieurs autres sites traitant de l'entomologie au Canada. Notre page WWW sera alors une façon d'établir des relations plus étroites avec les autres sociétés entomologiques au Canada et elle permettra une diffusion plus large de l'information entomologique.

Guy Boivin, David Blades,
Bev Mitchell, Steve Marshall
Comité du site WWW

Report of the Entomological Society of British Columbia

The Entomological Society of British Columbia had its last annual meeting during the joint meeting with the Entomological Society of Canada in Victoria, B.C. on October 17, 1995. At that meeting the new executive was elected as follows:

President:	Gail Anderson
President-elect:	Dave Gillespie
Secretary:	Robb Bennett
Treasurer:	Robb Bennett
Regional Director to ESC:	Terry Shore

Troy Danyk has taken over as editor of our newsletter "Boreus" from Elspeth Belton, and Peter Belton continues as editor of the Journal of the Entomological Society of British Columbia.

Several projects are being undertaken this year. We are continuing with organizing and cataloguing the ESBC library, which is housed at the Canadian Forest Service lab in Victoria. The society is also looking into establishing a scholarship fund for entomology students. Also, we are hoping to establish a World Wide Web site for the society in the next year.

The 1996 annual meeting will take place on October 22, 1996 at Simon Fraser University.

Terry Shore

Annual Report of the Entomological Society of Alberta

The 43rd Annual Meeting of the Entomological Society of Alberta took place on November 2-4, 1995 at the Holiday Inn (The Palace) in Edmonton. Approximately 65 people attended, and 26 papers and two posters were presented. The keynote speaker was Dr. Larry Speers (Biological Resources Division of Agriculture and Agri-Foods Canada, Ottawa) who spoke on "Global Master Species Databases". For the first time the Society organized a Public Relations Fair which preceded the Annual Meeting. The purposes of the Fair were to provide a forum to highlight the roles of entomology in society, and to show a cross-section of entomological activities (research and education) in Alberta using a variety of exhibits, from posters to live insect displays. The Fair was well attended by the public and media, and received a very complimentary writeup in *The Edmonton Journal*. The success of this fair has encouraged the Society to strive to make it an annual event. Two notable items emerged from the business meeting. Firstly, an undergraduate award in entomology was established, for which students attending post-secondary institutions in Alberta may apply. Secondly, the popular *Insect Collectors Guide* has been revised, and will shortly be printed and available for purchase.

The 44th Annual Meeting will be held in Lethbridge from October 31 to November 2, 1996. Local organizers are Kevin Floate (chair), Rose Declerke-Floate and Troy Danyk (local arrangements), and Tim Lysyk (program). The keynote speaker will be Dr. Tom Whitham (North Arizona University).

Arrangements for the Joint ESC/ESAlberta meetings to be held in Edmonton on October 4-8, 1997 are progressing well. Bruce Heming is serving as General Chair, John Spence and Jan Volney are organizing the Scientific Program, and David Langor is coordinating Local Arrangements. The theme of this meeting will be "Insects and Mother Earth".

It is with sadness that I report the passing of an Honorary Member of our Society, Mr. Lawrence (Larry) Andrew Jacobson, at the age of 86. Larry will be remembered for his work on cutworms and Say's Grain Bug. He will be missed by his many friends and colleagues.

David Langor

Annual Report of the Entomological Society of Saskatchewan

The Entomological Society of Saskatchewan held its annual meeting at Willow Bunch in conjunction with a tour of the Big Muddy Badlands and the St. Victor Petroglyphs, September 14-15, 1996.

Ron Hooper, longtime E.S.S. member, retired from the Royal Saskatchewan Museum in April of this year after 32 years of service. Ron was a former president of the E.S.S. and was the recipient of the E.S.C.'s Norman J. Criddle award in 1983. In addition to many other achievements he has collected 32 first records of butterfly species for the province and seven for Canada; he wrote and published the book *Butterflies of Saskatchewan* and is to a large part responsible for the R.O.M.'s approximately 100,000 mounted insect specimens.

Filming of the "Oilseeds Pests" video is nearly complete with script development, editing a small amount of indoor filming to be completed this winter. Footage has been shot of all major and many minor pests of canola and mustard as well as several parasites and predators important in their biological control. The Society is also exploring the possibility of producing a CD ROM using this material.

Once again several E.S.S. members spoke to students at local schools, Gardenscape in

Saskatoon, and at the Summer Ecology Camp at the University of Saskatchewan.

The E.S.S. has established a lending library of approximately 50 volumes. Titles are available to members on a range of subjects relating to entomology, ecology and apiculture.

Keith Moore

Annual Report of the Entomological Society of Manitoba

During 1995-6 the activities of the Entomological Society of Manitoba have included a number of luncheon meetings and a new members social. The Annual Meeting will take place in Winnipeg on 25 and 26 October 1996, and is a joint celebration of anniversaries: the Entomological Society has just completed its 50th year of operations, and the Department of Entomology at the University of Manitoba was founded 75 years ago. The meetings will consist of four symposia that highlight areas of entomological endeavour that have been important in the history of entomology in Manitoba.

Dr R. W. Currie, is currently president of the Society, and he will be succeeded by Dr T. D. Galloway, who will be president during the 1996-7 Society year. The Youth Encouragement and Public Education Committee has been active in promoting entomology through schools and organizations for young people by making slide presentations and loaning material for displays. During the last year, the Society conducted a membership survey, to determine how best to serve the needs of its members.

N. J. Holliday

Annual Report of the Entomological Society of Ontario

The 133rd Annual Meeting of the Entomological Society of Ontario will be held at the Guelph Turfgrass Institute, University of Guelph on 24-26 October 1996. The Theme of this year's meeting will be "Getting the Bugs into Teaching and Extension." The program includes a session entitled "Biology and Diversity of Ontario Insects" geared to both the professional entomologist and the general public.

The ESO's worldwide web (WWW) site has now been up and running for well over a year. The site allows us to promote the Society, advertise publications and meetings, provide scholarship and employment information, provide links to other entomological sites on the WWW, and much more. The ESO homepage can be accessed at the following URL: <http://www.utoronto.ca/forest/eso/eso.htm> To date, we have had several new members join the Society using the application form available on the WWW site.

The newsletter of the Society has undergone a dramatic facelift in 1996. The newsletter is now being produced using desktop publishing software which allows for a three-column format and the inclusion of graphics.

Officers of the Society for 1996 are:

President	Sandy Smith
President Elect	Robert Trottier
Secretary	D. Barry Lyons
Treasurer	Blair Helson
Editor (Proceedings)	Dolf Harmsen

D. Barry Lyons

La Société d'Entomologie du Québec

L'année 1996 a vu se concrétiser les efforts des membres de la SEC et de la SEQ afin que la ville de Montréal soit l'hôte de la réunion conjointe SEC-ESA en l'an 2000. La SEQ a également mis sur pied un comité de financement de la Société et de promotion de l'entomologie auprès du grand public.

La réunion annuelle 1995 de la SEQ a été tenue les 1 et 2 novembre à Montréal. Cette réunion a été organisée par M. D. Bouchard et son équipe. Le symposium regroupait huit conférenciers invités sous le thème de l'entomologie urbaine. Une vingtaine de communications scientifiques ont été présentées. M. D. Biron a obtenu le prix Melville Duporte pour la meilleure présentation étudiante. M. J. McNeil a été le premier récipiendaire de la "Distinction entomologique" de la Société. Il s'agit d'une nouvelle décoration qui vise à souligner la contribution exceptionnelle d'un individu aux diverses activités de l'entomologie au Québec. M. W. Smirnoff a été reçu membre émérite de la Société.

La réunion annuelle 1996 se tiendra à Québec les 29 et 30 octobre et aura pour thème "Lutte biologique aux ravageurs: Interactions, interférence et synergisme." Le Dr. Conrad Cloutier est responsable de cette réunion.

Jacques Brodeur

Annual Report of the Acadian Entomological Society

The Acadian Entomological Society held its annual meeting on October 7, 1996 at The Lord Beaverbrook Hotel, Fredericton, N.B. in conjunction with the annual meeting of the Entomological Society of Canada. The society currently has 40 members.

During the past year the AES Bulletin, a quarterly newsletter for the society, was initiated; Rob Smith is editor and Paul-Michael Brunelle does the layouts.

Member Paul-Michael Brunelle was selected as this year's winner of the ESC Norman Criddle Award recognizing the contribution of an outstanding non-professional entomologist. Paul's interest is in dragonflies and, through the Atlantic Dragonfly Inventory Project, he hosted the annual meeting of the Dragonfly Society of the Americas at St. Stephen, NB on June 29-30, 1996.

K. E. Gibbs

MINUTES

Governing Board Meeting, October 5-6, 1996 Lord Beaverbrook Hotel Fredericton, New Brunswick

The meeting was called to order at 08:30 h. on October 5, 1996 by President G. Boivin. Those present were President, G. Boivin; First Vice-President, S. Marshall; Second Vice-President, H.V. Danks; Past President, L. Safranyik; L. Gilkeson, incoming Second Vice-President; H. Thistlewood, E. Belton, R. West and S. Fitzpatrick, Directors-at-Large; J. Spence and L. Dosedall, incoming Directors-at-Large; T. Shore (ESBC), K. Moore (ESS), N. Holliday (ESM), B. Lyons (ESO), J. Brodeur (SEQ) and K. Gibbs (AES), Directors from Affiliated Societies; G. Gibson, Treasurer; P.E. Kevan, Scientific Editor, Canadian Entomologist and H. Barclay, Bulletin Editor; T. Danyk, Student Affairs Committee, L. Hollett, Research-Travel Grants Committee; and P. Dixon, Secretary.



ESC Governing Board 1996-97

Carried

1. *Notice of Meeting*

The notice for this meeting was mailed on 1 August 1996 and printed in the March, June and September 1996 issues of the Bulletin (Vol. 28).

2. *Additions to and approval of the Agenda*

There were no additions to the agenda.

R. West moved, K. Moore seconded approval of the agenda.

3. *Proxies and absences*

A. Ewen, C. Gillott & V. Behan-Pelletier sent regrets. There were no proxies.

4. *Minutes - Governing Board Meeting, Oct 14, 1995*

The minutes were circulated by the Secretary on November 16, 1995 and published in the December 1995 Bulletin.

L. Safranyik moved, R. West seconded acceptance of the minutes.

Carried

5. *Minutes - 45th Annual General Meeting, Oct 17/95*

The minutes were circulated by the Secretary on November 16, 1995 and published in the December 1995 Bulletin. The minutes will be presented for approval at the Annual General Meeting.

L. Safranyik moved, J. Brodeur seconded acceptance of the minutes.

Carried

6. *Minutes - Governing Board Meeting, Oct 18/95*

The minutes were circulated by the Secretary on November 16, 1995 and published in the December 1995 Bulletin.

R. West moved, H.V. Danks seconded acceptance of the minutes.

Carried

7. *Minutes - Executive Council Meeting, April 20, 1996*

H.V. Danks moved and L. Safranyik seconded the motion that the minutes as circulated by the Secretary on 30 April 1996, be accepted.

Carried

8. *Business arising from the previous minutes:*

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

8.1. Audit of income and expenditures of DPVCC book (Item 9.2.2, Governing Board Meeting, Oct 14/95; Item 9.2.2.1, Executive Council Meeting, 20 April/96) Moved to 9.2.2.

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8.2 Location of ESC meeting in 1998 (Items 9.2.10.4 and 9.2.10.5, Governing Board Meeting, Oct 14/95). Moved to 9.2.11.

8.3 Possible joint common names list with Entomological Society of America (Item 9.2.15, Governing Board Meeting, Oct 14/95). Moved to 9.2.16.

9. *New Business*

9.1.1 *Deaths*

Notice was given of the deaths of W. Gordon Simpson, Eric Rockburne, Fred Ide, Guy Shewell, Ken King, Larry Jacobson, Al West, Lloyd Peterson, Gordon Ayre and Doug Ross.

9.1.2 *Correspondence*

President Boivin presented three items as follows:

- A request was received from the International Congress of Plant Pathology for money to support attendance from developing countries at their 1998 meeting in Scotland.
- The President received letters from The Chancellery, Rideau Hall requesting information on Mr. Kenneth Davey and Dr. W. Smirnoff in support of their appointment to the Order of Canada. G. Boivin has answered for Dr. Smirnoff and the Governing Board suggested C. Gillott respond on behalf of Mr. Davey.

Action: C. Gillott

- The "Kansas School Naturalist" published by Emporia State University, requested funding.

9.2 *Reports from Officers, Trustees, Committees and Representatives*

Moved by L. Safranyik, seconded by K. Gibbs that all reports be received. Carried

9.2.1 *Executive Council*

G. Boivin summarized activities of the President's Office. The report will be presented at the AGM, and updates are printed regularly in the Bulletin.

9.2.2 *Treasurer*

Three budgets were presented for consideration, based on different options offered by the Publications Subcommittee of the Strategic Review Committee.

Additional items discussed:

- i. ESC can now accept payments by VISA or Mastercard. The back cover of The Canadian Entomologist for 1997 will be modified accordingly, as will the "Instructions to Authors". Publications Committee to be advised.

Action: G. Gibson

ii. Capital Investments: A total of \$7000 was invested, \$5000 in the General Fund and \$1000 in each of the Scholarship and Endowment funds. A portion of investments matured and were re-invested at the current interest rate, which is lower than the previous rate.

iii. The "Book Project" (Diseases and Pests of Vegetable Crops in Canada): Financial status of the book project was presented. Currently, a net loss is incurred on handling and shipping the book to customers. Increasing shipping charges to realistic levels will probably not reduce sales. The Marketing Committee must continue aggressively marketing book. Agreement was reached with the Canadian Phytopathological Society that the ESC would conduct an unofficial audit of the book finances, and that a formal audit of finances would be conducted this year at the same time as the regular ESC audit. Thereafter, the book finances would be audited annually.

Action: Marketing Committee

P. Kevan suggested that if there is a second edition, the words "in Canada" be removed from the cover and placed inside.

9.2.2.1 Auditors Report.

Financial statements for 1996 were circulated.

9.2.2.2 ESC Headquarters Committee

Back issues and other items have been relocated from a warehouse at Morrison Drive, to the ESC house on Winston Avenue, Ottawa. Regularly- accessed items were placed in the north half of the main floor of the house, with some other materials in boxes in the basement. Office staff were relocated from the north side to the south side, and the floor on the north side was strengthened with a joist. New fire detectors were installed, and one of the sump pumps in the basement was replaced.

9.2.3 Finance Committee

The Committee met with G. Gibson, ESC Treasurer, in September 1996 to discuss the three possible 1997 budgets. They recommend that the Executive re-negotiate salary with the managing editor, based on the absence of *Memoirs* and reduced *Canadian Entomologist* publication. If a satisfactory solution cannot be found then the Finance Committee recommends contracting out with Allen Press. They noted that before 1995, ESC annually published 3 or 4 *Memoirs* but neither one was published in 1995, and only one each is scheduled for 1996 and 1997.

A motion that the appropriate Standing Rule be changed to increase the purchasing limit from \$500 to \$1500, was made by H.V. Danks and seconded by J. Brodeur. Carried
This motion will be brought forward at the Annual General Meeting.

9.2.4 Scientific Editors

9.2.4.1 Scientific Editor - *Canadian Entomologist*

Since the end of September 1995, over 121 manuscripts have been processed. All Associate Editors are on email and this is facilitating the exchange of information and opinion. A replacement for J. Cunningham in the area of insect pathology, is required, and another Associate Editor is needed in the area of crop entomology. Dr. Kevan announced his intention to resign as

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Scientific Editor of The Canadian Entomologist effective 31 December 1997. A bilingual ad for a replacement must be placed in the December 1996 Bulletin.

Action: H. Barclay

There was discussion of the implications of charging for abstract translations. The Technical Editor could routinely pass abstracts through the Bilingualism Committee.

Action: B. Patterson, J. Delisle

9.2.4.2 Scientific Editor (Memoirs)

A Memoir on "Microbial Control of Grasshoppers and Locusts", edited by M.S. Goettel and D. Johnson, should be in press later this fall. There are no other submissions to the Memoirs at this time. Dr. Behan-Pelletier thanked the anonymous reviewers and the office staff at Headquarters.

9.2.5 Editor - Bulletin

The Bulletin Editor requested that reports be sent by email or on diskette. The Secretary will note this request in call letters for reports.

Action: P. Dixon

The present size of the Bulletin (6 1/2 by 10 inches) makes printing more expensive than would a more standard size. N. Holliday moved, K. Moore seconded that the Publications Committee investigate using a different paper size for the Bulletin, if cost savings result.

Carried

Action: A. Ewen

9.2.6 Publications Committee

Changes were made to the "Instructions to Authors" that the Society has copyright on our journals as a whole but that each author retains copyright for his/her own article. Re-designed covers are in place for the Bulletin and the Canadian Entomologist, and information on the back cover of the journal has been changed to read that it has six issues yearly rather than being issued bi-monthly. The Committee decided that rules regarding Scientific Notes be strictly enforced rather than changed, and recommended that the Bulletin continue to be sent to institutional as well as individual members. One C.P. Alexander Fund paper was accepted for publication during the past year. Authored by Dr. M. Mackauer, the paper dealt with host choices by aphidiid wasps.

The Governing Board accepted the Committee recommendation that the North Carolina State University Water Quality Group be permitted to use abstracts and citations from The Canadian Entomologist as part of a database on World Wide Web. The ESC President should sign the form letter provided.

This motion was made by S. Fitzpatrick, seconded by K. Gibbs.

Carried

Action: S. Marshall

9.2.7 Nominations Committee

The Governing Board accepted the report of the Nominating Committee as published in

the March 1996 Bulletin. Nominations were:

Second Vice-President: Linda Gilkeson, Cedric Gillott
Director-at-Large: Lloyd Dosdall, John R. Spence, Jeff G. Stewart
Fellowship Committee: George H. Gerber, John A. McLean, Bernard Roitberg.

9.2.8 *Elections Committee*

A total of 214 ballots was counted. The following were elected to office: Linda Gilkeson, Second Vice-President; Lloyd Dosdall, John Spence, Directors-at-Large; George Gerber and Bernard Roitberg, Fellowship Committee.

N. Holliday moved and L. Safranyik seconded the destruction of the ballots.

Carried

Action: J. Corrigan

9.2.9 *Fellowship Committee*

The Fellowship Committee's recommendation to recognize George Gerber as the Fellow for 1996 was ratified by the Governing Board in April. The Strategic Review recommended that the Fellowship and Achievement Awards Committees be merged.

N. Holliday moved, R. West seconded that the Committee Guidelines for the new Achievement Awards Committee include a statement that all nominations received for Fellows be valid for three years.

Carried

Action: G. Gerber

9.2.10 *Achievement Awards Committee*

The Board extended congratulations to Dr. Jarmila Kukalova-Peck, winner of the 1996 Gold Medal, and Dr. Tim Lysyk, recipient of the 1996 C. Gordon Hewitt Award.

H.V. Danks motioned, R. West seconded that the Committee Guidelines be changed to state that each year the Nominations Committee should actively seek nominations of worthy candidates for the Gold Medal and the C. Gordon Hewitt Award.

Carried

Action: G. Gerber, G. Boivin

H.V. Danks motioned, R. West seconded that the Committee Guidelines be changed to require a restriction to service "no more than once in any four year period".

Carried

Action: G. Gerber

9.2.11 *Annual Meeting Committee*

9.2.11.1 1996 (Fredericton)

Plans for the meeting are progressing well with an estimated attendance of 120-140. About 100 submitted papers, posters and symposia are on the program, as well as six workshops. Jon Sweeney, General Chair, thanked the members of the Organizing Committee for their hard work.

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9.2.11.2 1997 (Edmonton)

To be held October 4-8 at the Crowne Plaza. Dr. Bruce Herning is serving as General Chair, Drs. John Spence and Jan Volney are organizing the scientific program, and Dr. David Langor is coordinating local arrangements. The theme of this meeting will be "Insects and Mother Earth".

9.2.11.3 1998 (Quebec)

Thanks to Michel Letendre, Québec City has offered to host the 1998 meeting. A decision whether the 1999 meeting will be held in Saskatchewan, will be made in the coming year.

Action: K. Moore

9.2.11.4 2000 Meeting with the Entomological Society of America

In June, Dr. George Gerber participated in a site selection trip to Toronto and Montreal with Mr. Harry Bradley, Executive Director, Entomological Society of America (ESA), and Dr. C. Osteo, of the ESA Governing Board. The site selection committee supported the Montreal package and subsequently, this city was approved by the Governing Board of the ESA. Meetings will be held from 2-7 December, 2000.

Action: S. Marshall, Executive Council

N. Holliday moved, L. Safranyik seconded that the Governing Board direct the incoming President to negotiate with the ESA and the SEQ to develop an MOU organizing the joint meeting in 2000.

Carried

Action: S. Marshall

Several additional points were discussed:

The possibility of asking Mexico to participate in the joint meeting, i.e. a "pan-North American biodiversity symposium" could be organized.

The Finance Committee should be involved from the outset in framing a Memorandum of Understanding. We may wish to examine any existing arrangements between ESA and their Branches. Perhaps we can use their model.

It may be useful to consult with Freeman McEwen on the last joint meeting with ESA in Toronto.

A media event pre-meeting could be staged by ESC/SEQ.

9.2.12 *Bilingualism Committee*

A few texts have been received for translation during the past year, and all were translated by Committee members at no charge to the Society. The Committee recommended that the \$500 annual budget be maintained in case a professional translation service is required.

9.2.13 *Bylaws, Rules and Regulations Committee*

Standing Rules and Committee Guidelines were changed as instructed following the 1995

Governing Board and Annual General Meetings. Equivalent changes to the French version were made by Dr. J. Delisle and revised documents sent to the Secretary.

9.2.14 *Endangered Species Committee*

The past year saw continued growth of public interest in Endangered Species at the same time as resources available for the study of endangered species seems to have diminished. Various Committee members had input into the public review of proposed endangered species legislation and Environment Canada's document "Report on Public Consultation: A national approach to endangered species conservation in Canada". Committee members in B.C. have been particularly active in the past year. The Endangered Species Committee recommended that unless someone comes forward wishing to chair and champion the Committee, it be discontinued, as recommended by the current Strategic Review.

9.2.15 *Heritage Committee*

R.F. DeBoo offered to continue serving as Chair during the next year and invites anyone with interest to join the Committee, particularly residents of Québec and Ontario. The first draft of a list of ESC officers since the Society's founding may be ready for review by early winter.

Regarding depositing personal papers of eminent Canadian entomologists in the National Archives, the Board suggested a call for nominations from members/Regions be placed in the Bulletin. The Heritage Committee can then review the feasibility of the nominees and perhaps generate their own list as well.

N. Holliday moved, K. Gibbs seconded that the Governing Board direct the Heritage Committee to: define precisely what should be deposited; advertise in the Bulletin; review nominees and their own ideas with regards to the material available and the representativeness of the nominees; and provide the Executive Council with a suggested list of entomologists who should have materials deposited.

Carried

Action: R.F. DeBoo

9.2.16 *Insect Common Names and Cultures Committee*

A copy of the ESC's Archival Database of insect common names was sent to CABI. Dr. Bin-Cheng Zhang will send a yearly report about any of the scientific names that have changed or differ from those on the ANI database. Most of the original supply of 3.5" diskettes have been sold. P. Kevan was asked to provide 25 copies of these diskettes but this is too few for a commercial company. G. Gibson will have an ESC member based in Ottawa make copies and appropriate labels.

Action: G. Gibson

Regarding "Project 2000", the ESC/ESA joint common names list, Dr. Bosik (ESA) does not believe we have the support to combine both lists. The Governing Board felt that the preparation of a joint list in time for the joint 2000 meeting is desirable and suggested the ESC President contact the ESA President on this issue.

Action: S. Marshall

9.2.17 Membership Committee

An up-to-date listing of the membership will be provided with the interim report next spring. Preparation of an accurate membership list is continuing. Initiatives for 1996/97 include revision and distribution of ESC leaflets to universities and regional societies and completion of the membership list on diskette.

N. Holliday moved, R. West seconded that we send to all members a paper copy of the membership list with names, postal and email addresses and telephone and fax numbers. H.V. Danks moved, K. Moore seconded the motion be tabled at the Governing Board meeting on October 9, for discussion with J. Stewart. Carried.

There was a discussion of the quota for Honorary Members. H.V. Danks moved, R. West seconded that up to one Honorary Member can be appointed per year. Carried.

9.2.18 Public Education Committee

The Committee approved grants of \$200 to the ESS and the AES to purchase materials required for making a stand-alone display for school presentations, and to purchase display cases for educational activities, respectively. A recent request from SEQ (for \$200) was also granted.

9.2.19 Scholarship Committee

Nine eligible applications were received, all of high calibre. Winners for 1996 are M. Patrice Bouchard from Macdonald Campus of McGill University, working on a survey of the arthropods of alvars on Manitoulin Island, and Ms. Heather Garnett from Mount Allison University, working on aquatic invertebrates and fungi on leaf detritus in a freshwater stream.

The Governing Board ratified the change recommended by the Executive Council as a result of their April 20, 1996 meeting, that ESC membership be a prerequisite for candidates applying for Post-Graduate Scholarships & the Kevan Award. Membership currently is a prerequisite for Research-Travel Grant applicants.

This motion was put forward by H.V. Danks and seconded by K. Gibbs.

Carried

Action: G. Gerber, J. Soroka

9.2.20 Research-Travel Grants Committee

The Committee selected Ms. Lynn Rocchini and Mr. Jeff Lemieux, both from the University of Northern B.C., as the 1996 winners of the Travel Grant Award. Ms. Rocchini will travel to the USDA Forest Service in California and Mr. Lemieux will visit the laboratory of Dr. John Spence, University of Alberta.

9.2.21 Science Policy Committee

Two items came to the attention of the Science Policy Committee during 1996, the most important of which is the current NSERC reallocations exercise. The Science Policy Committee has notified NSERC of our interest in having input into defining and defending our research community, and draft documents are currently circulating around the Committee. Information on the reallocations process can be found on the Web at <http://www.nserc.ca/programs/reall>. The Science Policy Committee has also prepared a draft response to an open letter from the Minister of the Environment, Sergio Marchi, in which he has offered to compile and publish all of the "bio-

diversity projects and activities" submitted to him between Environment Week '96 and Environment Week '97.

9.2.22 *Student Affairs Committee*

This Committee was very active, establishing an internet discussion group, coordinating the "share-a-room" program at the Fredericton meeting, reviewing reports from the subcommittees of the Strategic Review and publishing notices of graduate study and job vacancies in the Bulletin. A survey of education/training in Canada, was initiated. It was suggested that results of the survey on entomology training should be published in the Bulletin and on the ESC home page, and that T. Danyk refer to previous ESC studies on entomology training. Also, the Committee should determine how many students are ESC members. To ensure students are aware of Entomo-L, it should be advertised in the Bulletin.

Action: T. Danyk

9.2.23 *Ad hoc Marketing Committee*

In 1995, the Committee distributed a questionnaire to examine the feasibility of the sale of merchandise with an entomological theme. Of the forty-five responses received, all supported the sale of such items by the Society. T-shirts with a line drawing of an insect, ceramic mugs and calendars, were the most popular items. The Committee assisted in the preparation of 5 brochures to market the 169 past Memoirs. Each brochure will list a particular taxon: Hymenoptera, Coleoptera, Lepidoptera, Diptera/Heteroptera and Miscellaneous. Marketing of the DPVCC book continues. Of the 4,500 copies printed, 2,667 were sold or ordered as of August 28, 1996. Note that all copies must be sold for total recovery of publication costs. Complimentary copies were provided for reviews appearing in professional journals and newspapers; a review from the *J. economic Entomology* (89:1045-1046) was distributed.

The Governing Board recommended that the brochures listing past Memoirs be advertised on our website.

Action: K. Floate

9.2.24 *ESC Website (Ad hoc Committee)*

The website was installed on 5 October 1996, and can be accessed at the following URL:

<http://www.biology.ualberta.ca/esc.hp/homepage.htm>

The site will reside on the University of Alberta server for a trial period of about two years, during which time we will judge its impact and assess potential costs. We should be able to hotlink our website with Affiliated Societies, the Insectarium in Montreal, and other entomologically-relevant sites.

N. Holliday moved, R. West seconded that a Continuing Committee be established, the Web Committee, with a minimum membership of one, the Web Editor. Responsibilities of the Committee include sending contentious material to the Publications Committee, and maintaining the Website.

Action: G. Gerber

9.2.25 Regional Entomological Societies

Reports were received from the AES, SEQ, ESO, ESM, ESS, ESA and ESBC. Highlights: Paul-Michael Brunelle has been selected the 1996 winner of the ESC "Criddle Award", which recognizes the contribution of an outstanding non-professional entomologist to the furtherance of entomology in Canada. Mr. Brunelle's interest is in dragonflies. Three issues of the new "AES Bulletin" were published. Three awards were presented at the 1995 SEQ meeting: D. Biron won the E. Melville Duporte Prize for the best student presentation, W. Smirnoff was made an Emeritus Member and J. McNeil was the first recipient of the "Distinction entomologique". Montreal has been chosen as the site for the joint ESC-ESAmerica meeting in the year 2000; the SEQ will be heavily involved in helping organize this event. About 24 papers were submitted for the Don Wallace memorial issue of the Proceedings of the Entomological Society of Ontario. The theme of the 133rd Annual Meeting of the ESO to be held in Guelph in late October 1996, will be "Getting the Bugs into Teaching and Extension". The ESO worldwide website has been running for over a year; the homepage resides on a server at the University of Toronto and can be accessed at the following URL: <http://www.utoronto.ca/forest/eso/eso.htm>. The 1996 Annual Meeting (October 25-26) of the ESM will celebrate the 50th year of operations of the ESM and the 75th anniversary of the founding of the Department of Entomology at the University of Manitoba. Dr. T. Galloway will be ESM President during 1996-7. The ESS annual meeting was held September 14-15, 1996. Ron Hooper, longtime ESS member and 1983 winner of the ESC Criddle Award, has retired from the Royal Saskatchewan Museum after 32 years of service. Filming of the "Oilseeds Pests" video is nearly complete - ESS may produce a CD ROM version. The 43rd Annual Meeting of the ESA was held in Edmonton in November, 1995. The keynote speaker was Dr. Larry Speers (Agriculture and Agri-Food Canada), who spoke on "Global Master Species Databases". A very successful Public Relations Fair held before the Annual Meeting attracted media and public attention. An undergraduate award in Entomology was established, and the "Insect Collectors Guide" has been revised and will soon be available for purchase. Troy Danyk is the new editor of the ESBC newsletter "Boreus". ESBC is continuing to organize their library, which is housed at the Canadian Forest Service lab in Victoria. They are looking into establishing a student scholarship fund as well as a world wide website.

Regional Directors are reminded to advertise upcoming regional meetings in the Bulletin and to advise the Secretary of these meetings.

9.3 Other Business

i) Two requests have been received for permission to reproduce original illustrations and text from the DPVCC book. After discussion, the ESC Executive Council agreed provided that due acknowledgement be given to the source and that details on how to purchase the book, be included. The Canadian Phytopathological Society agreed providing requests are "limited use". Current requests are from small publishing companies but should a large organization wish to use material from the book, we may ask for royalties.

L. Safranyik moved, K. Moore seconded, acceptance of the requests discussed. Carried.

ii) Criddle Award - a memo had been received by the Secretary from member R. Smith asking whether the book "Criddleiensis" and a certificate, are sufficient for the Criddle Award. This is an award honouring and recognizing an "unknown" amateur before the National Society. The Board asked that the Achievement Awards Committee review the guidelines for the Criddle Award, and consider whether ie. the certificate could be framed, travel or registration costs could be paid.

Action: L. Gilkeson

iii) There is a significant amount of stationary (letterhead, envelopes, brochures) and Awards with the old ESC logo in the Ottawa office. It was suggested that these materials be used despite the logo. P. Kevan noted that as Scientific Editor of The Canadian Entomologist he could make use of the letterhead and envelopes.

Date and place of next meeting

The next meeting of the Governing Board will be held at the Lord Beaverbrook Hotel in Fredericton on October 9, 1996.

Adjournment of meeting President Boivin adjourned the meeting at 12:45 h., 6 October 1996, following a motion by L. Safranyik (seconded by H.V. Danks).

Minutes

46th Annual General Meeting Lord Beaverbrook Hotel Fredericton, New Brunswick October 8, 1996

President G. Boivin called the meeting to order at 16:35. Fifty-five members were present.

1. Notice of Meeting

Notices of the meeting were published in the March, June and September 1996 issues of the Bulletin (Vol. 28).

2. **Proxies:** There were no proxies.

3. Additions to the Agenda and Approval of the Agenda

D. Storch moved and E. Becker 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: W. Gordon Simpson, Eric Rockburne, Fred Ide, Guy Shewell, Ken King, Larry Jacobson, Al West, Lloyd Peterson, Gordon Ayre and Doug Ross. P.L. Dixon thanked Ed Becker for writing letters of condolence to the families of the deceased.

5. Minutes of the 45th Annual General Meeting

Minutes of the 45th Annual General Meeting were printed in the December 1995 issue of the Bulletin (Vol. 27).

B. Lyons moved and K. Gibbs 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 Boivin presented a report on behalf of the Governing Board. The report from the Governing Board and regular updates are published in the Bulletin. This particular report will be published in the December, 1996 Bulletin (Vol. 28).

7.1 *Changes to Standing Rules*

i. Membership approved the request that the appropriate standing rule be changed to increase the purchasing limit from \$500 to \$1500. Motion was presented by R. West and seconded by N. Holliday. Carried

ii. N. Holliday moved and L. Gilkeson seconded that the Web Committee be established as a Continuing Committee. Carried

7.2 *Strategic Review*

This Committee, struck in 1995, was directed to recommend changes in the structure and operations of the Society. The following recommendations were approved by the Governing Board on October 5, 1996, and by the general membership at the Annual General Meeting on October 8.

i. The Fellowship Committee be eliminated and a new Achievement Awards Committee select worthy recipients for the Gold Medal Award, the C. Gordon Hewitt Award, Fellows and Honorary Members. This Committee should have 6 members.

Moved by G. Gerber, seconded by L. Gilkeson.

Carried

ii. The Scholarship and Graduate Research-Travel Grants Committees be replaced by the Student Awards Committee. This Committee should have 7 members, 3 of whom are systematists.

Moved by J. Borden, seconded by N. Holliday.

Carried

iii. The Science Policy and Public Education Committees be replaced by the Science Policy and Education Committee. This Committee should consist of 13 members: 3 members, 7 Directors from Affiliated Societies, First Vice-President, Second Vice-President and the President (ex officio).

Moved by E. Becker, seconded by G. Gerber.

Carried

iv. The Marketing Committee should be set up as a continuing Committee and should have 4 members.

Moved by G. Gerber, seconded by K. Moore.

Carried

v. The Headquarters Committee should be set up as a continuing Committee and should have 3 members.

Moved by N. Holliday, seconded by T. Shore.

Carried

vi. The Chairs of the following Committees should normally be members of the Governing Board: Nominating; Achievement Awards; Finance; Publications; Science Policy and Education; Marketing; By-Laws, Rules and Regulations.

Moved by G. Gerber, seconded by H. Barclay.

Carried

vii. The number of members on the Finance Committee should be reduced from 6 to 4, and on the Insect Common Names Committee from 9 to 3.

Moved by L. Gilkeson, seconded by M. Goettel.

Carried

viii. Add to Standing Rule on Committee Appointments: The President, in consultation with other members of the Executive Council, shall ensure broad overlap of times of appointments to Committees.

Moved by N. Holliday, seconded by D. Storch. L. Gilkeson amended the motion to read "terms" instead of "times". Amended motion

Carried

ix. The Endangered Species and Annual Meeting Committees are discontinued.

Moved by G. Gerber, seconded by H. Barclay.

Carried

x. The Memoirs should be discontinued and the publication of lengthy manuscripts or proceedings of Symposia be done on a case by case cost-recovery basis as special issues of The Canadian Entomologist that could be delegated to an Associate Editor.

Moved by L. Gilkeson, seconded by E. Becker.

Carried

xi. Submission of manuscripts to The Canadian Entomologist should not be limited to members of the Society but an extra charge of \$10 per page should apply to non-members, effective for manuscripts received after 1 January, 1997.

Moved by B. Lyons, seconded by B. Broadbent.

Carried

xii. Submission of the final (ie. accepted) version of a manuscript in an electronic form should be encouraged by establishing an extra charge of \$5 per page for manuscripts submitted only in paper form. Effective for manuscripts received after 1 January, 1997.

Moved by N. Holliday, seconded by L. Gilkeson. N. Holliday amended to read per "print-ed" page. Amended motion

Carried

xiii. Authors submitting a manuscript to The Canadian Entomologist should be required to submit a translation of their abstract. Those not submitting one (or submitting one of poor quality), should be charged \$50, effective for manuscripts received after 1 January, 1997.

Moved by G. Gerber, seconded by H. Barclay.

Carried

8. *Auditor's Report*

G. Gibson presented the Auditor's Report for 1995 as published in the June 1996 issue of the Bulletin (Vol. 28).

G. Gibson moved and K. Moore 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: Linda Gilkeson, Second Vice-President; Lloyd Dosdall and John Spence, Directors-at-Large; George Gerber and Bernard Roitberg, Fellowship Selection Committee.

10. *Installation of Officers*

The President called on L. Safranyik to escort L. Gilkeson, Second Vice-President, to the dias. President Boivin turned the gavel over to S.A. Marshall 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.

11. *Presentation of Service Awards*

President Marshall thanked G. Boivin, outgoing President for his service to the Society and presented him with a service award.

12. *Appointment of Auditor*

G. Gibson moved and L. Safranyik seconded that McCay, Duff, and Company be retained as Auditors for 1996.

Carried

Action: Treasurer

13. *Resolutions*

At the request of President S.A. Marshall, R. West presented the following resolutions on behalf of the Entomological Society of Canada:

Thanks to organizing committee

"Whereas the 1996 Annual Meeting of the Entomological Society of Canada and the Acadian Entomological Society have met at the Lord Beaverbrook Hotel in Fredericton, October 5-9, 1996; and

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

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

Whereas there has been ample opportunity for social interaction and visits to Fredericton and surrounding areas;

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 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 Lord Beaverbrook Hotel for their courteous assistance during the Meeting."

R. West moved and G. Gerber seconded that the resolutions be accepted.

Carried

Action: P.L. Dixon

14. *New Business*

nil

15. *Notice of 47th Annual General Meeting*

The 47th Annual General Meeting will be held at the Crowne Plaza Hotel in Edmonton, Alberta on October 7, 1997. Further notices for the meeting will be published in the March and June 1997 issues of the Bulletin (Vol. 29).

Action: P.L. Dixon

16. *Adjournment*

President S.A. Marshall adjourned the 46th Annual General Meeting at 18:00 h. following a motion by E. Becker, seconded by L. Safranyik.

Minutes

Governing Board Meeting, October 9, 1996 Lord Beaverbrook Hotel Fredericton, N.B.

The meeting was called to order at 1200 hours on October 9, 1996 by President S.A. Marshall. Those present were S.A. Marshall, President; H.V. Danks, First Vice-President; L. Gilkeson, Second Vice-President; G. Boivin, Past-President; S. Fitzpatrick, R. West, L. Dosdall, E. Belton, J. Spence, Directors-at-Large; T. Shore (ESBC), K. Moore (ESS), N. Holliday (ESM), J. Brodeur (SEQ), and K. Gibbs (AES), Directors from Affiliated Societies; G. Gibson, Treasurer; P.E. Kevan, Scientific Editor-Canadian Entomologist; H. Barclay, Bulletin Editor; P.L. Dixon, Secretary; T. Danyk, Student Affairs Committee; J. Stewart, Membership Committee and B. Riel (demonstration of computerized membership list).

1. *Notice of Meeting*

Notice of this meeting was mailed on August 1, 1996 and given at the Board Meeting of October 5-6, 1996.

2. *Absences and Proxies*

Al Ewen and Valerie Behan-Pelletier were absent; there were no proxies.

3. *Additions to and approval of the Agenda*

There were no additions. The agenda was accepted following a motion by Guy Boivin and seconded by Rick West.

Carried

No action required

4. *Minutes of Previous Governing Board Meeting*

Minutes of the Governing Board meeting held on October 5-6, 1996 will be circulated to the Board by the Secretary in November, and published in the December Bulletin.

No action required

5. *Business Arising from Previous Governing Board Meeting*

i. Membership Committee - There was a discussion on updating the ESC membership list. Terry Shore and Bill Riel have been preparing both Mac and Windows versions of the membership database. Jeff Stewart, Committee Chair, stated that an updated print version will be available by Christmas 1996, and the diskette version will be ready soon. Gary Gibson, Jeff Stewart and Sandy Devine will discuss how to add new members to the database.

The Governing Board directed the Membership Committee to distribute a membership list to all members by December 31, 1996 (moved by N. Holliday, seconded by G. Boivin - Carried).

Action: J. Stewart

ii. H. Danks moved and G. Boivin seconded that the Guidelines for the new Science Policy and Education Committee include reference to endangered species. Carried.

Action: G. Gerber

6. *Other Business*

6.1 *Appointments*

6.1.1. *Executive Council*

J. Spence moved and T. Shore seconded that the Executive Council for 1996-97 be: S.A. Marshall, President; H.V. Danks, First Vice-President; L. Gilkeson, Second Vice-President; G. Boivin, Past-President.

Carried

No action required

6.1.2. *Trustees*

L. Gilkeson moved and R. West seconded that the Trustees for 1996-97 be: G. Gibson,

Treasurer; P.G. Kevan, Scientific Editor (Canadian Entomologist); V. Behan-Pelletier, Scientific Editor (Memoirs); H. Barclay, Bulletin Editor; P.L. Dixon, Secretary.

Carried

No action required

6.1.3. *Committees and Representatives*

L. Gilkeson moved and R. West 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.

A list of Committee Chairs for 1996-1997 was discussed. The President will write to all Committee Chairs and Representatives confirming their appointment for 1996-1997.

Carried

Action: S.A. Marshall

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

Carried

Action: P.L. Dixon

6.2 *Budget*

G. Boivin moved and J. Brodeur seconded that the budget for 1997 (the version including publications) as presented by the Treasurer, be approved.

Carried

Action: G. Gibson

There was a discussion regarding potential savings in mailing publications i.e. mailing The Canadian Entomologist and the Bulletin together.

7. *New Business*

i. Many Societies have differential registration fees at annual meetings, one for members and one for non-members. Our Affiliates set registration fees and must be consulted on this issue.

H. Danks moved and G. Boivin seconded that the Finance Committee investigate the desirability of adding an extra charge to Annual Meeting registration fees.

Carried

Action: E. Becker

ii. Heritage Lecture: The Bulletin Editor has the discretion to publish the Heritage Lecture in the Bulletin; the Lectures have been published in previous years.

iii. An ad hoc Committee will be assembled to investigate bids on contracting out. S. Marshall and G. Gibson will establish the Committee.

Action: S. Marshall, G. Gibson

iv. P. Kevan thanked the Governing Board for their moral support in the publication of his book on anthophilous Diptera.

v. S. Marshall raised the possibility of the ESC managing a student award established from Congress of Dipterology profits. After considerable discussion, it was decided that S. Marshall would clarify the potential arrangement with the "Dipterology Fund Committee" established after the Congress.

Action: S. Marshall

8. *Next Meeting*

The next meeting of the Governing Board will be held on 4 October 1997, at the Crowne Plaza Hotel in Edmonton, Alberta.

9. *Adjournment*

The meeting was adjourned by President S.A. Marshall at 13:30 h. following a motion by L. Gilkeson, seconded by J. Spence.

Changes to By-Laws

As a result of the recent Strategic Review Exercise, the Governing Board, at its October meeting, recommended approval of the following changes to the Entomological Society of Canada By-Laws. The changes reduce the number of Directors at Large on the Governing Board from six to three, and combine the Fellowship and Achievement Awards Committees. In preparation for a general membership vote - via mailed ballot in the spring of 1997 - the changes are presented below for your consideration.

(1) **By-Law IX (1)**

The Directors of the Society shall be three Directors-at-Large, and a director from each Affiliate. They shall serve without remuneration.

(2) **By-Law IX (2)**

One Director-at-Large shall be elected by annual mail ballot for a three-year term and shall take office at the end of the annual meeting following their election. A vacancy may be filled by the Board. Directors-at-Large may be removed before the completion of a normal term of office by a majority vote of an annual or special meeting of the Society.

(3) **By-Law XI (1)**

The Committees shall include a Nominating Committee and an Election Committee, which shall be appointed and may be removed by the Board or by the President subject to ratification by the Board.

The following was deleted from this By-Law: "and a Fellowships Committee."

(4) **By-Law XIII (5)**

Affiliates and Honorary Members shall be elected by ballot.

The following was deleted from this By-Law: " the Fellowships Committee"

PERSONALIA

**Entomological Society of Canada Gold Medal
for Outstanding Achievement in Canadian Entomology 1996**

presented to

**Dr. JARMILA KUKALOVA-PECK
at Fredericton, New Brunswick, October 7, 1995**

President Guy Boivin and Dr. Kukalova-Peck



The 1996 recipient of the Entomological Society of Canada's Gold Medal for outstanding achievement in entomology is Dr. Jarmila Kukalova-Peck.

Jarmila Kukalova was born and raised in Czechoslovakia; she attended the Charles University, Prague, and received the degree of M.S., magna cum laude, in Geology, in 1956 and the Ph.D. in Paleontology in 1962. As a faculty member at Prague, 1955-1970, she established herself as a widely recognised insect paleontologist. During this period she also made two lengthy visits to the Museum of Comparative Zoology at Harvard, at the invitation of Prof.

F.M.Carpenter, and served as the Alexander Agassiz Lecturer 1968-1969.

Her interest early centred on the archaic orders of giant insects of the Upper Carboniferous and Permian, Palaeodictyoptera, Megasecoptera, and the rest. Many new families, genera and species were collected and described from recently discovered Permian sites in Moravia. Probing repeatedly for detailed structural features, and in search of evolutionary relationships, the foundations of much later work were being laid. A radical revision of the Palaeodictyoptera from the Commentry shales - hitherto the best known of all paleozoic insects - was completed.

In 1970 Dr. Kukalova married Dr. Stewart Peck, a biologist with a parallel interest in systematics and evolution (of beetles, especially the cave-faunas), and soon afterwards moved with her two daughters to Carleton University in Ottawa - still their centre of operations - with no interruption of research and publication on either side.

Throughout her work at Carleton, Dr. Kukalova-Peck studied the fossil material with great care and precision, using the most delicate of tools and the most refined optical equipment, and thus disclosing detail that brings to light anatomical facts on a new level of precision. This emerges repeatedly in the many photographs of the actual fossils in her published work. It went along with a comparable insight into the nature of what was being sought; it was not, of course, modern structures in an antique setting, but rather the actual structure of a more than 200 million year old insect which might be quite different from its modern, relictual, representatives. The way was thus open for important recognitions, some of which are now re-shaping our ideas of the phylogenetic relationships of the insects that exist today.

A long series of studies, throughout the seventies, of the wing venation and mechanism of wing movement in these giant Palaeozoic insects yielded, step by step, an 8-partite plan of the system of veins - a pattern never before discerned - and a corresponding complexity of the articulating mechanism. Much of this work was reviewed in 1978 (*J. Morphol.*, 156) along with other emerging themes. It showed also that these ancient insects constituted a monophyletic group, the Palaeoptera. From this there developed also a special interest in structure of the insectan and

hexapod limb, considerably more complex than that of any modern, derived, form. She proposed an 11-segmented origin, most fully traceable in the thorax where three basal segments have been transformed into the lateral pleuron - an idea adumbrated by R.E. Snodgrass. In the head, the abdominal segments of certain juveniles, and in the terminal segments, more limb-segments have been incorporated into the body wall, and only the pre-femoral portion remains in limb-like form. Wings, and certain other structures, are persuasively regarded as basal exites of these appendages, thus denying a prevailing concept of the uniramous insectan appendage due to S. Manton.

The development of wings in the juveniles of certain Palaeoptera led to yet another re-orientation of traditional knowledge. Abdominal 'winglets' in a graded series similar to the developing thoracic wings, persisted into a sexual maturity that extended through several instars (a modified remnant of this still exists in the mayflies). Thus in these forms, unlike all existing insects, no distinctive 'metamorphic instar' existed, and metamorphosis in the modern sense was derived several times independently.

These findings have recently been drawn together in a long chapter, Fossil history and the evolution of hexapod structures in *Insects of Australia*, CSIRO, 2nd edn, 1991. Dr. Kukalova-Peck is now working with other specialists, notably Dr. John Lawrence, in examining the existing orders of insects to determine their relationships and their internal classification. Fortune favours the brave.

These remarkable accomplishments have already been recognised by her election as a Fellow of the Royal Society of Canada and as an Honorary Life Member of the Entomological Society of the Czech Republic. A bibliography of her scientific work will be published in the next issue of the Bulletin.

**Medaille d'Or de la Société d'entomologie du Canada
pour souligner la contribution exceptionnelle en entomologie canadienne 1996
présenté à
DR. JARMILA KUKALOVA-PECK
à Fredericton, New Brunswick, le 7 octobre, 1996**

En 1996, Mme Jarmila Kukalova-Peck, Ph.D., reçoit la médaille d'or que décerne la Société d'entomologie du Canada en reconnaissance de réalisations exceptionnelles dans le domaine de l'entomologie.

Jarmila Kukalova naît et grandit en Tchécoslovaquie; elle étudie à la Univerzita Karlova à Prague et obtient une maîtrise ès sciences, avec grande distinction, en géologie en 1956 ainsi qu'un doctorat en paléontologie en 1962. A titre de membre du corps professoral à Prague, de 1955 à 1970, elle acquiert une grande renommée en matière de paléontologie des insectes. Au cours de cette période, elle fait également une longue visite à deux reprises au musée de zoologie comparative de Harvard, à l'invitation du professeur F.M. Carpenter; elle agit à titre de chargée de cours de la chaire Alexander Agassiz de 1968 à 1969.

Au début, elle se concentre surtout sur les ordres archaïques d'insectes géants du Carbonifère supérieur et du Permien, les Paléodictyoptères, les Megaséoptères, et les autres. Plusieurs familles, espèces et genres nouveaux ont été prélevés dans des sites permien découverts récemment en Moravie; ils ont ensuite été décrits. Les nombreuses explorations effectuées dans le but de rassembler des données détaillées sur les caractéristiques structurales et d'étudier les rapports évolutifs ont permis de jeter les fondements de recherches qui auront lieu beaucoup plus tard. Une révision radicale des Paléodictyoptères provenant des formations de schiste de Commentry, qui étaient à ce jour les insectes paléozoïques les mieux connus, a été réalisée.

En 1970, Mme Kukalova épouse M. Stewart Peck, un docteur en biologie qui s'intéresse parallèlement à la systématique et à l'évolution (des coléoptères, en particulier des espèces qui habitent les grottes); elle s'installe peu après avec ses deux filles à la Carleton University à Ottawa - qui constitue toujours leur centre d'opération - sans interrompre leurs recherches ou la publication de leurs ouvrages respectifs.

Tout au long des travaux qu'elle exécute à Carleton, Mme Kukalova-Peck étudie minutieusement la matière fossile; elle utilise les instruments les plus délicats et l'équipement optique le plus perfectionné pour révéler des détails qui font ressortir des faits anatomiques avec une précision jamais atteinte jusque-là. Les nombreuses photographies de fossiles qui sont incluses dans les ouvrages publiés par Mme Kukalova-Peck mettent continuellement cette précision en évidence. Les recherches exigent une compréhension comparable de la nature des données recherchées; il ne s'agit pas, bien entendu, de repérer des structures modernes dans un milieu antique, mais plutôt la structure réelle d'un insecte âgé de plus de 200 millions d'années qui est probablement très différent de ses représentants modernes relictuels. La voie est désormais ouverte à la reconnaissance de faits importants, dont certains nous amènent à modifier l'idée que nous nous faisons des relations phylogéniques des insectes qui existent de nos jours.

Durant les années soixante-dix, une longue série d'études portant sur la nervation alaire et le mécanisme du mouvement des ailes de ces insectes paléozoïques géants permet d'établir progressivement un plan à huit parties du système de nervures - une conformation jamais entrevue jusque-là - et de révéler la complexité correspondante du mécanisme d'articulation. Une bonne part de ces travaux et d'autres thèmes nouveaux sont examinés en 1978 (*J. Morphol.*, 156). En outre, les recherches démontrent que ces insectes anciens constituent un groupe monophylétique, les Paléoptères. A la suite de ces travaux, Mme Kukalova-Peck s'intéresse particulièrement à la structure des membres des insectes et des hexapodes, qui est beaucoup plus complexe que celle de toute forme moderne dérivée. Elle formule l'hypothèse de la présence de 11 segments à l'origine, qu'il est plus facile de retracer dans le thorax où trois segments basaux ont été transformés en plèvre latérale, une idée esquissée par R. E. Snodgrass. D'autres segments de membres se sont intégrés à la paroi corporelle dans la tête, dans les segments abdominaux de certains juvéniles ainsi que dans les segments terminaux, et seule la partie préforale se présente toujours sous forme de membre. On croit fermement que les ailes, et quelques autres structures, sont des exites basaux de ces appendices, ce qui contredit le concept couramment accepté formulé par S. Manton, selon lequel les appendices des insectes sont uniramés.

Le développement des ailes chez les juvéniles de certains Paléoptères a occasionné une autre réorientation des connaissances traditionnelles. Une série progressive d'«ailettes» stade métamorphique

Ces résultats ont récemment été rassemblés en un long chapitre intitulé «Fossil history and the evolution of hexapod structures» (*Insects of Australia*) que dirige actuellement, en collaboration avec d'autres spécialistes, dont M. John Lawrence, Ph.D., les ordres d'insectes actuels en vue de déterminer leurs relations et leur classification interne. La fortune sourit aux audacieux.

Mme Kukalova-Peck a déjà été récompensée pour ses réalisations remarquables: elle a été élue Membre de la Société royale du Canada, et membre honoraire à vie de la société entomologique de la République tchèque. Une bibliographie de ses ouvrages scientifiques sera publiée dans le prochain numéro du Bulletin.

**Entomological Society of Canada C. Gordon Hewitt Award
for Outstanding Achievement in Canadian Entomology, 1996
presented to
TIMOTHY JAMES LYSYK
at Fredericton, New Brunswick, October 7, 1996**

President Guy Boivin and Timothy Lysyk



The 1996 recipient of the Entomological Society of Canada's C. Gordon Hewitt award for outstanding achievement in entomology by an individual under 40 is Dr. Timothy James Lysyk of the Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, Alberta.

Dr. Lysyk was born August 6, 1959, in Ottawa, Ontario. Tim lived in The Northwest Territories, British Columbia, Saskatchewan and Ontario before completing his secondary education in Edmonton, Alberta. He attended the University of Alberta and received a B.Sc. (Honours) in zoology in 1980. He earned an M.S. in Entomology at South Dakota State University in 1982 under the supervision of Dr. E.R. Easton with a thesis entitled "The response of the face fly (*Musca autumnalis*) to seasonal changes in manure quality". He was awarded a Ph.D. in 1985 by North Carolina State University under the supervision of Dr. R.C. Axtell with a thesis entitled "Sampling and dispersal of house fly (*Musca domestica* L.)(Diptera: Muscidae) populations in poultry houses".

Tim's interest in entomology began during his undergraduate years as a summer student at the then Lethbridge Research Station in 1978. During his first summer, he was employed by Dr. K. Richards and Dr. A.M. Harper to work on pollinators and pests of alfalfa. His interest in medical-veterinary entomology was stimulated when he returned to Lethbridge in 1979 to work for Dr. M.A. Khan on the biology and control of horn flies and cattle grubs. In 1980 he again returned to Lethbridge to work for Mr. Joe Shemanchuk on the biology and control of mosquitoes and black flies. During his final year as an undergraduate, he conducted an independent study in entomology under the guidance of Dr. Doug Craig of the Department of Entomology, University of Alberta. These experiences and the resulting associations with his immediate supervisors and with other notable medical-veterinary entomologists such as Dr. P.R. Wilkinson, Dr. R.A. Nelson and Mr. J. Weintraub were pivotal in determining his career path.

Dr. Lysyk was appointed as a Research Scientist at the Great Lakes Forestry Centre, Canadian Forestry Service, in Sault Ste. Marie, Ontario, in 1985 to work on the population dynamics and modeling of spruce budworm and jack- pine budworm. In 1989, he returned to the Lethbridge Research Centre to conduct research on the development of integrated pest management programs for flies affecting livestock. His research interests include developing biological control methods for flies using parasitoids and pathogens; the development of sampling and monitoring methods for insect populations; and determining ecological factors responsible for determining changes in survival, reproduction and development including diapause, in house flies, stable flies and horn flies. He is currently using this information to develop population models for these species. He has also developed an overwhelming interest in the use of analog insect models as feeding stimulants for salmonids, an activity he vigorously pursues at every opportunity. Dr. Lysyk has published 36 refereed articles in scientific journals as well as numerous miscellaneous publications, and has received grants in excess of \$620,000.

Dr. Lysyk is a Guest Instructor for the M.P.M. program at Simon Fraser University and

lectures on the ecology and management of livestock pests. He is also an Adjunct Professor of Biological Sciences at the University of Lethbridge and has taught several courses in entomology, general ecology and animal ecology, and has supervised undergraduate student research projects.

Dr. Lysyk has been a Director of the Entomological Society of Alberta and is Chairman of the Western Committee on Livestock Pests. He has assisted in the organization of numerous workshops and meetings. He served on the Editorial Board of the Journal of Medical Entomology from 1991 to 1995 and currently is Co-editor of Environmental Entomology.

**Société d'entomologie du Canada prix C. Gordon Hewitt
pour souligner la contribution exceptionnelle en entomologie canadienne
présenté à
TIMOTHY JAMES LYSYK
à Fredericton, New Brunswick, le 7 octobre, 1996**

En 1996, le prix C. Gordon Hewitt que décerne la Société d'entomologie du Canada à une personne de moins de quarante ans en reconnaissance des réalisations exceptionnelles de cette dernière dans le domaine de l'entomologie est remise à M. Timothy James Lysyk, Ph.D., du centre de recherches de Lethbridge, d'Agriculture et Agroalimentaire Canada, situé à Lethbridge (Alberta).

M. Lysyk naît le 6 août 1959 à Ottawa (Ontario). Il vit dans les Territoires du Nord-Ouest, en Colombie-Britannique, en Saskatchewan et en Ontario avant de terminer ses études secondaires à Edmonton (Alberta). Il étudie à la University of Alberta qui lui confère un baccalauréat ès sciences avec spécialisation en zoologie en 1980. Il obtient une maîtrise ès sciences en entomologie à la South Dakota State University en 1982 sous la direction de M. E.R. Easton, Ph.D.; sa thèse traite de la réaction de la mouche faciale (*Musca autumnalis*) aux changements saisonniers survenant sur le plan de la qualité du fumier. En 1985, il reçoit un doctorat de la North Carolina State University sous la direction de M. R.C. Axtell, Ph.D.; sa thèse porte sur l'échantillonnage et la dispersion des populations de la mouche commune (*Musca domestica* L.) (Diptera: Muscidae) dans les poulaillers.

Tim commence à s'intéresser à l'entomologie en 1978 au cours de ses études de premier cycle alors qu'il est embauché pour l'été au centre qui portait le nom de station de recherches de Lethbridge à l'époque. Durant le premier été qu'il passe à cet endroit, MM. K. Richards et A.M. Harper, Ph.D., lui confient des travaux sur les agents de pollinisation et les ravageurs de la luzerne. Son intérêt pour le domaine de l'entomologie médicale et vétérinaire s'accroît lorsqu'il retourne à Lethbridge en 1979 dans le but de procéder, pour M. M.A. Khan, Ph.D., à des recherches axées sur la biologie de la mouche des cornes et du varron, ainsi que sur la lutte contre ces parasites. En 1980, il retourne de nouveau à Lethbridge pour participer aux travaux qu'exécute M. Joe Shemanchuk sur la biologie des moustiques et de la mouche noire, ainsi que sur la lutte contre ces parasites. Au cours de la dernière année de ses études de premier cycle, Tim réalise une étude entomologique indépendante sous la direction de M. Doug Craig, Ph.D., du département d'entomologie de la University of Alberta. Pour Tim, ces expériences ainsi que les associations que ces dernières lui ont permis de former avec ses superviseurs immédiats et d'autres éminents spécialistes de l'entomologie médicale et vétérinaire, comme MM. P.R. Wilkinson et R.A. Nelson, Ph.D., et M. J. Weintraub, représentent un élément crucial de l'établissement de son plan de carrière.

En 1985, M. Lysyk est nommé au poste de chercheur scientifique au Centre de foresterie des Grands Lacs du Service canadien des forêts à Sault Ste Marie (Ontario); il est chargé de procéder à des recherches sur la dynamique et la modélisation des populations de la tordeuse de

bourgeons de l'épinette et de la tordeuse du pin gris. En 1989, il retourne au centre de recherches de Lethbridge afin d'effectuer des recherches visant à élaborer des programmes de lutte antiparasitaire intégrée pour combattre les mouches qui s'attaquent au bétail. Plusieurs domaines de recherche le fascinent, dont les suivants: élaboration de méthodes de lutte biologique qui permettront de combattre les mouches à l'aide de parasitoïdes et de pathogènes; mise au point de méthodes d'échantillonnage et de surveillance des populations d'insectes; et identification des facteurs écologiques qui provoquent les changements survenant sur les plans de la survie, de la reproduction et du développement, y compris la diapause, de la mouche commune, de la mouche d'étable et de la mouche des cornes. M. Lysyk se sert actuellement de l'information ainsi obtenue pour créer des modèles de population de ces espèces. En outre, il éprouve un vif intérêt pour l'utilisation de modèles analogues d'insectes comme phagostimulants destinés aux salmonidés, une activité à laquelle il s'adonne énergiquement aussi souvent qu'il le peut. Il a publié 36 articles examinés dans des journaux scientifiques et dans de nombreuses publications; il a reçu des subventions totalisant plus de 620 000 \$.

M. Lysyk est chargé invité du programme de M.P.M. (maîtrise en lutte antiparasitaire) de la Simon Fraser University et il présente des conférences sur l'écologie des parasites du bétail et sur les méthodes employées pour lutter contre eux. Il est également professeur auxiliaire en sciences biologiques à la University of Lethbridge et il a donné plusieurs cours dans les domaines de l'entomologie, de l'écologie générale et de l'écologie animale; il a assuré la supervision des projets de recherche d'étudiants de premier cycle.

M. Lysyk a occupé le poste de directeur de la société d'entomologie de l'Alberta et il est actuellement président du Comité de l'ouest sur les parasites du bétail. Il a participé à l'organisation d'un grand nombre d'ateliers et de réunions. Il a fait partie du comité de rédaction du *Journal of Medical Entomology* de 1991 à 1995; il est présentement rédacteur adjoint de la publication *Environmental Entomology*.

Obituary

Gordon Leonard Ayre (1930-1996)

Gordon Ayre died peacefully at home in Victoria, BC, on 30 August 1996 after a short illness with cancer. After 37 years as a research entomologist, Gordon retired to Victoria in 1989. He was born in Trail, B.C. and obtained his B.S.A (1951) and M.Sc. (1953) from the University of British Columbia. Gordon's professional career began with the Biological Control Investigations Laboratory, Entomology Branch, Canada Department of Agriculture, Vancouver, on 1 May 1953. For the next 2 years, he worked with Mac McCarthy and Jim McLeod on the biology and biocontrol of forest, orchard, and forest pests. Research on the control of ants was the beginning of a lifetime interest in these social insects. When the Vancouver Laboratory closed in 1955, Gordon moved to the Entomology Research Institute for Biological Control in Belleville, Ontario.



For the next 16 years, Gordon's research involved studies on the ecology, behavior, and distribution of ants as they related to the use of ants as predators of forest insect pests. These investigations took him to the University of Freiburg, Germany, in the early 1960's. In 1971, When the Belleville Institute was closed, he moved to the Winnipeg Research Station, Agriculture Canada, and began a very different research career.

In Winnipeg, after some initial investigations on the influence of soil arthropods and other

factors on the incidence of root rot of barley, Gordon concentrated on studies of the biology and monitoring of cutworm pests of agriculture. His knowledge and skill in developing rearing techniques was a continuing help to his colleagues. During this period, Gordon responded to complaints from Manitoba strawberry growers and quickly identified the cause, the strawberry cutworm, described its biology, developed a monitoring technique, and tested methods for cultural and chemical control. This led to cooperation with Dean Struble, Lethbridge, in field testing a number of sex attractants for pest cutworms. In these tests, and in other projects, Gordon was a valued cooperator and source of advice to his colleagues. Throughout his time in Winnipeg, he maintained his interest in ants and his contacts with ant scientists around the world. Recently he began to plan a publication on the ants of British Colombia, with Ken Naumann and Bill Preston. It is sad that he could not have culminated his long-standing fascination with ants by completing this project.

Gordon was always an excellent communicator with students, growers, and amateur science groups, and willingly gave his time and skills to help them. He was a long-time member of the Entomological Society of Canada and served on the executive of the Entomological Society of Manitoba and other associations. He was also a skilled woodworker and gardener, combining art and science to produce excellence.

Gordon is survived by his wife, Anne, and five children, Leslie Falcon(Steve), Nadine Burta (Ron), Janice Smith (Mike), Brian and Terese, and two grandsons, Justin and Brendin Burta. He was predeceased by his first wife, Joyce Fry, in 1963.

W.J.Turnock, H.G. Wylie,
Winnipeg, Manitoba.

ARTICLES

The Origin of Insect Flight

By Jarmila Kukalova-Peck, Carleton University, Ottawa, Canada.



Flying insects represent a whopping 72% of all animal species. Their evolutionary success is mostly attributed to their development of wings and powered, flapping flight. Insect wings, unlike those of birds and bats, are not derived from limbs. Therefore, their origin, early use and function are extremely difficult to explain. In other animals the adaptation of fins into legs (early amphibians), legs into fins (whales) and legs into wings (flying reptiles, birds and bats) is known to be very complex, required millions of years of vigorous motion, and was strongly motivated by survival. The wing structure of insects is equally complex. The wing foils

of insects are supported by aeromechanically sophisticated venation systems, powered by an intricate battery of muscular attachments and tendons, and moved by uniquely formed articular sclerites combined with the deformations of the outer skeleton. Clearly, such an apparatus also required a thorough preadaptation over millions of years, and a very powerful, constant need for fast motion which was close to that of flapping flight.

There is an ample, convincing evidence that all insect wings evolved from a single ancestral protowing pattern. Winged insects (Pterygota) originated with protowings and diversified with their transformation into wings capable of powered, flapping flight. The earliest pterygotes with protowings did not leave behind any fossil record. The oldest known Carboniferous ptery-

gotes already have fully developed flapping wings. They comprise only one extinct line (palaeodictyopteroids) and seven surviving lines (ephemeropteroids, odonatopteroids, plecopteroids, orthopteroids, blattopteroids, hemipteroids, and endopterygotes). Therefore, for the reconstruction of the origin of flight, we must rely mainly on two sources: morphological deductions based on fossil and modern wing structure (wing venation, articulation and musculature), and aerodynamic experiments with models.

For many years the largest hurdle to explaining the beginning of flight was the fundamental discrepancy between the morphology and aerodynamics. Based on complex anatomical, fossil, neurophysiological and genetic evidence (Kukalova-Peck 1983, review and references) wings evolved from articulated, movable appendages of arthropodan legs called the leg rami. In the Precambrian and Cambrian, the appendages were probably functioning as movable, articulated plate gills (as abdominal plate gills in mayfly nymphs today). However, this evolutionary scenario conspicuously lacks an explanation, why and how the plate gills/protowings start they long preadaptation towards flapping wings capable of powered flight. What were they doing before they were capable to fly?

The non-flying protowings are mostly believed to be short and broad, nearly symmetrical, supported by 8 dichotomously branched veinal ridges, and articulated between tergum and pleuron. They were surrounded and mobilized by leg muscles, and capable of flexing backwards over abdomen in a roof-like position. Contrary to this, wings capable of powered, flapping flight must be much larger, with venation endowed by many sophisticated aerodynamic features, with highly complex articulation, and it must be mobilized by a combination of leg musculature and refined deformations of the outer skeleton. Clearly, there is a wide - and unexplained - morphological gap between protowing and powered flapping wing. It was suggested that protowings were engaged in some kind of a vigorous forward flapping movement, which was important for escape from predators (Kukalova-Peck 1987). Only such strong incentive could have been powerful enough to instigate an enlargement of the wing blade and many other changes, which were necessary to build up for flapping flight.

However, these morphological deductions sharply disagreed with the aerodynamic experiments. It has been convincingly shown that protowings could not generate any flapping flight, not even after a jump from the ground, cliffs, or trees (Wootton and Ellington 1993). If used in flying, protowings were only capable of gliding, preferably from an elevated place, and after jumping into the wind. This did not sound right, because gliding requires little energy and minimal adaptations, and it provides few or no incentives for profound transformations of the wing blade, cuticle, articular sclerites, musculature and the outer skeleton.

A breakthrough in the long lasting impasse was the flight origin hypothesis offered by Marden and Kramer (1994). The authors observed non-flying short-winged Plecoptera with their legs and abdomen rested on the water surface, as they skimmed away from predators by flapping vigorously their short wings. On another occasion, Plecoptera (Marden 1995) were using their reduced, nonflying wings as sails. These observations opened a new approach and an attractive possibility that evolutionary, developmental, and aerodynamic observations are compatible after all: protopterygote lived in isolated patches of low, ancient vegetation and floating algal mats, their juveniles lived in water, and adults flapped their short protowings vigorously to skimm away from predators. As protowings adapted to ever faster flapping, they increased in size and acquired flapping-friendly articulation, musculature, and skeleton deformation until they reached the conditions suitable for powered flight, and took off into the air. The merit of this model is that, for the first time, the diverse historical, morphological and mechanical aspects of flight are being explained as sequential and compatible, and not as synchronous and incompatible. A new generation of aerodynamic experiments is currently in progress in America and Europe.

Marden (1995) implied that possibly some groups of modern primitive insects (Plecoptera) skimming and sailing on the water surface, may have retained their primitive wing function. This cannot be the case. The water skimming is highly suggestive as a model, but it is, quite clearly, secondary. The pre-flight conditions of the protowing, as displayed in venational system, are very different from those of powered, flapping wings. As shown in many experiments by R.J. Wootton and other workers in aerodynamics, powered flight is impossible without some fusions and braces in venation near wing base. Each line of pterygotes bears a certain, characteristic pattern of fusions, braces, and frequently also struts, in which they differ one after another (each has a characteristic "wing formula"). For instance, the Plecoptera wing formula, present in all Plecoptera but best seen in the primitive members, is as follows: the stem of M, the stem of Cu, MA fused with RP, and m-cua strut present; in articulation, 2Ax has medial axalare broadly triangular, radial fulcalare with a large lobe, its hinge with medial axalare lost; 3Ax has cubital arm fused with cubital axalare (see Kukalova-Peck 1983 for terminology). Identical wing formula occurs in the skimming Plecoptera, but not in the most plesiomorphic form at the Plecoptera level (JKP, manuscript in progress). This shows that the wings of skimming Plecoptera lost powered aerial flight rather than being on their way to acquire it.

The question how the venational support of the protowing looked like is very interesting. The fact is that protowing can be quite confidently hypothesized, because we know very well, from other 100 years of experience and use in systematics, how insectan wing venation evolved: principal veins and branches, once fused into a stem or a brace near wing base, never unfuse; the same, if reduced, never reoccur. If all venation systems of modern insect lines are searched for all incidences of unfused principal veins, we find out which, if any, fusions between principal veins are shared by all pterygote insects. These, of course, logically are almost certainly the part of the ancestral protowing. I have done all pterygote search (1983) and the result was that modern pterygotes do not share any fusions or braces between principle veins and branches, except one, a complete fusion of precosta and costa, which forms and stiffens the anterior (=costal) wing margin. In function language it means that (i) the protowing shared by all Pterygota was very probably engaged in forward movement (=strong margin formed), but (ii) it was incapable of powered flight (=the lack of necessary fusions), (iii) the divergence of major lines started with adding fusions and braces (wing formulae of individual lines are different), therefore, (iv) powered flight proper must have evolved several times in parallel, and (v) the wing venation/articulation is very promising for showing the relationship between the higher taxa, lines superorders, orders, suborders and superfamilies. However, only under one specific condition, as below.

The condition essential for using the wing structure successfully in higher phylogenetics is the correct homologisation of all elements of wing venation and articulation in all Pterygota. Without it, identical features are called "oranges" in one, and "pears" in another order. They show differences at the species and genus level, but phylogenetic relations between the higher taxa are completely wiped out. The homologisation for the all-ptyergote phylogenetic tree is now well advanced (JKP, manuscript). Step by step we are arriving at a moment when the entire wing structure, wing venation, articulation, and musculature, will be available for the higher phylogenetics, which is notoriously difficult to resolve. The best progress has been made so far in the Coleoptera, in which it was possible to document the long disputed relationship between the suborders and some superfamilies (Kukalova-Peck and Lawrence 1993; Strepsiptera and Coleoptera display 6 synapomorphies in the wing venation and 8 new ones were recently found in the articulation. Wing articulation was further developed and used in the phylogeny of Scarabaeoidea (Brown 1995, PhD thesis, Brown and Scholtz 1966, 10 publications). Wing venation is extensively used in the higher systematics of Odonatoptera (Bechly 1996, PhD thesis and 8 co-authored publications). The enigmatic phylogenetics of the Orthoneoptera seems to respond very well (JKP and Rentz, advanced manuscript), and Hymenoptera are the subject of a PhD thesis by A. Roy, McGill University, Montreal. Unfortunately, the systematists who adhere to non-homologous, traditional pterygote veinal systems, will agree with the opinion of Kristensen (1995) that

“the wing venation is not suited for the higher phylogenetics”. But, those who are already using the homologised wing structure, are discovering dozens of previously unknown, higher level characters (over 100 in the Scarabaeoidea) and maintain just the opposite.

Is there any possibility at all that some living insects could have retained the protowing? The answer is unfortunately no. All winged insects known so far, including 300 million years old Paleozoic fossils, already belong either to the Paleoptera (= oldwinged insects) or to the Neoptera (= newwinged insects). These groups already acquired two very distinctive sets of flight adaptations which are not shared, which cannot have evolved one from the other, and which can be homologised only through the hypothesized common ancestor (Kukalova-Peck 1991). Mayflies, the most primitive living Paleoptera, have paleopterous features plus unique wing formula of their own which is shared with the extinct paleozoic order Syntonopterodea. Stoneflies, the heroes of Marden's study and the most primitive living Neoptera, also combine the flight adaptations of Neoptera plus their own wing formula, which is shared with the Paleozoic stoneflies. Early Paleoptera and Neoptera on the way to powered flight lived probably in the Devonian some 400 million years ago, or earlier. The protowing without specific flight adaptations, could have occurred only in the common ancestor of Paleoptera and Neoptera, sometimes in the Ordovician or Silurian Period 500-400 million years ago. Fresh water deposits from these periods are almost entirely eroded away.

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NEWS OF ORGANIZATIONS

International Commission on Zoological Nomenclature

Opinions published in the Bulletin of Zoological Nomenclature

The following Opinions were published on 30 September 1996 in Vol. 53, Part 3 of the Bulletin of Zoological Nomenclature. Copies of these Opinions can be obtained free of charge from the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K.

- **OPINION** 1847. *Diplocentrus mexicanus* Peters, 1861 (Arachnida, Scorpiones): rediscovered holotype confirmed as the name-bearing type
- **OPINION** 1850. *Nepa rustica* Fabricius, 1781 and *Zaitia stollii* Amyot & Serville, 1843 (currently *Diplonychus rusticus* and *Belostoma stollii*; Insecta, Heteroptera): specific names conserved
- **OPINION** 1851. Xantholinini Erichson, 1839 Quediini Kraatz, [1857] (Insecta, Coleoptera): given precedence over some senior synonyms; *Quedius* Stephens, 1829: *Staphylinus levicollis* Brullé, 1832 designated as the type species
- **OPINION** 1852. *Melissodes desponsa* Smith, 1854 and *M. agilis* Cresson, 1878 (Insecta, Hymenoptera): specific names conserved
- **OPINION** 1853. *Xerammobates* Popov, 1951 (Insecta, Hymenoptera): *Ammobates oxianus* Popov, 1951 designated as the type species

BOOK REVIEWS

Gotwald, W. H., Jr. 1995. *Army Ants: The Biology of Social Predation*. Cornell University Press, Ithaca, NY. xviii + 302 pp., 20 plates. Hard cover, \$(US) 39.95.

Consummate group predators and nomads of the animal world, the army ants generate considerable fascination not only among scientists but also with the general public. After conducting over 25 years of his own research on the group, Bill Gotwald has produced a comprehensive treatment of the true army ants that is both a sound scientific reference and an entertaining natural history. Copious illustrations (including 37 colour photographs) complement a well-organized text written in a personal, easy-to-read style. Woven in are some really unusual observations; for example, who can fail to be impressed that the stomach of one pangolin "contained 6 liters of termites in its anterior portion and an equal amount of driver ants in the posterior portion"?

After a brief introduction that includes a discussion of the army ant adaptive syndrome, Chapter 2 provides a discussion of the classification and distribution of the true army ants. Although this expands upon and updates an earlier work (Gotwald 1982, pp. 157-254 in *Social Insects* vol. IV, H. R. Hermann, ed., Academic Press, NY), it does not entirely replace it for example, keys to genera and subgenera for all castes are not included in the current book. Chapter 3 focuses on colony composition and structure. The extensive treatment of functional morphology reflects Gotwald's own training and research in this area. It would be wonderful to have such a treatment for ants in general would he like to write one?

Chapter 4, Behavior, is understandably the longest. The role of pheromones in communication, foraging, and reproduction are all treated in depth, but open research questions and opportunities abound. For example, genetic analyses could quickly resolve many of the uncertainties on mating behaviour and colony structure. And how does one study the foraging behaviour of hypogaedic army ants?

The second-longest chapter, "Guests and Predators", could easily be expanded into a full book. Army ants have an enormously diverse array of obligatory and facultative interrelationships with a taxonomic smorgasbord of symbionts, predators, and parasites; these include (to name just a few) staphylinid, histerid, carabid and limulodid beetles, tachinid, phorid and sphaerocerid flies, mites, blind snakes, ant birds, and even gorillas and chimpanzees. Particularly impressive are the Wasmannian mimics, best exemplified by several staphylinids, certain ecitophilous diapiids, and the strange phoretic mite *Planodiscus*. Gotwald presents a revised functional classification of army ant symbionts (likely to be expanded some day to include endoparasites), and supplements the life history synopses with wonderful illustrations.

The book closes with chapters on "The Role of Army Ants in Tropical Ecosystems" and "Myth and Metaphor" and an epilogue "In Defense of Army Ants (and Other Tropical Beasts)"; these sections address many of the public's questions about the role of army ants in fact and fiction. I was pleased to see Carl Stephenson's short story "Leiningen versus the Ants" described as "remarkable" and analyzed without a stern lecture on the horrors of scientific inaccuracy in fiction.

At its very reasonable price, this book will not only be warmly received by entomologists and tropical biologists, it deserves to be in every university and public library of moderate size. It is also suitable for high school libraries, as most of the subject material is quite accessible to a keen student at this level.

A biographical note: Bill Gotwald wrote a textbook (with Gale Holtz Golden), *Sexuality: The Human Experience* (1981, Macmillan, NY) that took him down the path of the famous entomologist and sex researcher, Alfred C. Kinsey. Unlike Kinsey, Bill stayed with insects as his major research organism (perhaps Kinsey had a good reason to leave entomology - he was a cynipid taxonomist). *Army Ants: The Biology of Social Predation* is just one highlight of an ongoing career richly spent considering the ways of the (army) ant.

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Gillott, Cedric. *Entomology*. Second Edition. Plenum Press, New York. 1995. xviii + 798 pp. Cost \$85.00 U.S. hard cover, \$49.50 U.S. soft cover.

The target readership of the book is senior undergraduate students taking a first entomology course, and it is assumed that such students will have previously encountered insects in a general zoology course. The first edition of the text appeared in 1980, and so the appearance of a second edition is timely, and has allowed considerable updating of some chapters, notably those on the evolution and diversity of insects and that on insects and humans. The first edition was reviewed (*Bulletin of the Entomological Society of Canada* 14: 84-85) by members of the Department of Entomology at the University of Manitoba, and members of the same Department have jointly prepared the following review of the second edition.

The basic organization of the book into four sections is unchanged from the first edition.

The first, and most extensive, section deals with evolution and diversity, and begins with a chapter on arthropod evolution. Here, there are a considerable number of new references since the first edition and a much revised treatment of arthropod and hexapod evolution that includes more recent phylogenetic hypotheses. Chapter 2 provides an extended discussion of theories of the phylogeny of Insecta. The chapter has been considerably rewritten and emphasizes, to the point of imbalance, the interpretations of Kukolová-Peck. Chapter 3 is a review of external morphology, illustrated largely with drawings from Snodgrass; this chapter is not greatly changed from the first edition, with the exception of the discussion of evolutionary origins of appendages. Chapter 4 outlines the principles of insect classification, and presents a history of insect classification that depends heavily on Wilson and Doner (1937) and treats more recent developments anecdotally and superficially. This chapter contains the only identification key in the book: a key to orders for identification of adults and larval forms. Chapters 5–10 present treatments of the insect orders; each order is briefly introduced, and there follow sections on structures (for both adults and juveniles in some cases), life history and habits, and phylogeny and classification. This information is followed by sections on the superfamilies in the order, with relatively detailed accounts on characters, importance, numbers of species, etc. The format of these six chapters leads to a rather choppy style, and it is not clear what students are supposed to gain from the information provided.

The sections on anatomy and physiology (Section II) and reproduction and development (Section III) present an enormous amount of information on the structure and function of insects. For the most part this information is presented in a readable and useable manner. These sections have been updated in the new edition, but on most topics the changes have not been extensive. The rationale for choice of topics for substantial revision is not obvious. Some topics, for example cuticle deposition, have received considerable attention, appropriate to the developments in the field since the first edition. However other topics, for example flight muscles and the click mechanism, have been left unchanged in spite of considerable recent discussion in the literature. An average of 6–7 recent references (1985 to the present) have been added to each chapter in these sections. These additions range from a single recent reference in Chapter 15 (Gaseous Exchange) to 15 recent references in Chapter 19 (Reproduction). However there has been no change in approach to information in the new edition. In the two sections, there are only nine illustrations that present data in a graphical or tabular form that requires the student reader to evaluate the material independently.

The fourth and final section deals with the ecology of insects, and consists of three chapters. The first of these deals with the abiotic environment, and shows slight changes from the first edition. These include modifications of the treatment of diapause, and rearrangement and augmentation of the section dealing with the influences of weather. It is surprising that the author left out the comprehensive Canadian work by Danks, H.V. (1987, *Insect Dormancy: an ecological perspective*, Biological Survey of Canada Monograph series No. 1.), but included contemporary references from other countries. The chapter on the biotic environment has been augmented with new information on insect plant interactions and some additional illustrations. The final chapter deals with interactions between insects and humans, and includes both beneficial and pest insects. Data on losses and benefits due to insects, pesticide use, etc. have been updated, as have some of the sections dealing with specific control measures. The treatment of pest control reflects very much a “first world consumer” view point: pest control is, we are told, “essentially a sociological problem—a matter of economics, politics, and psychology” (P710). This seems to ignore the implications for human health and nutrition of not controlling pests. Terminology in the pest control section is, at times, confusing; for example, there are frequent references to the “economic injury threshold” — presumably a hybrid of the terms economic injury level and economic threshold.

Illustrative material is of mixed quality, and frequently is not well integrated with the text.

Figures depicting representatives of the insect orders are often montages from several sources, and bear no indication of size. As a result, the reader gets the impression that, notonectids are larger than belostomatids (p.220), and *Cimbex* is smaller than *Neodiprion* in (p. 329). Portrayal of phylogenetic trees, while aesthetically pleasing, does not conform to modern standards of systematics. Perhaps one of the most problematic figures depicts the effect of temperature on incubation period and rate of development (p 628): although the one line should plot the reciprocal of the other, the scale for the rate of development line is incompatible with this; the "linear portion" of the development rate curve is referred to several times in the text, but is not well illustrated by the curve; finally, since the first edition, this figure has lost its axis labels.

A useful feature of the book is a short section on literature at the end of each chapter, and at the end of the sections dealing with orders. These provide the student with an entry point into the literature. However, choice of literature, both in these sections, and in the text as a whole, might have been more even. In some topic areas, there is adequate representation of recent primary literature sources; not surprisingly this is true of the author's field of reproductive physiology. However, the literature sources for other topics are often dominated by a small number of reviews or other secondary sources, for example just over half of the recent references in sections II and III of the book are from the multi-volume 1985 monograph edited by G.A. Kerkut and L.I. Gilbert (Comprehensive Insect Physiology, Biochemistry and Pharmacology, Pergamon Press).

In our review of the first edition, a number of errors were identified, with the expectation that these would be corrected in future editions. Sadly, some of these errors have survived the revision. These include the statement that "rate of development is inversely proportional to temperature" (P627) and the use of three different names for *Acyrtosiphon pisum* in Table 24.2.

Viewed from the point of view of a student using this as a text in a first entomology course, the book could be very frustrating because of its "cart before the horse" organization. Features of external morphology are described in Chapter 3, but extensive reference is made to these features in Chapters 1 and 2. Similarly, the chapters on the insect orders make frequent references to internal anatomy, a topic that is addressed much later in the text. The absence of a glossary means that there is no simple way for a student to deal with these preemptive encounters with unfamiliar terminology and concepts. The strengths of the book are the amount of information that it contains, and the generally readable and clear form in which the material is presented. This would make the book a useful reference work for senior undergraduate students, who already have a reasonable degree of familiarity with the field.

Various Members of Staff, Department of Entomology
Faculty of Agricultural and Food Sciences, University of Manitoba
Winnipeg, Manitoba

Fitzgerald, Terrence D. 1995. "The Tent Caterpillars", Cornell University Press, 303 pp. \$37.95 U.S., clothbound.

This delightful volume, in the vanguard of the new Cornell Series in Arthropod Biology, promises a library collection that will have entomologists scrambling to find room on their personal bookshelves. The series was a pet project of the late George Eickwort, and thus it is fitting that *The Tent Caterpillars* is presented with the sort of wonder and enthusiasm that characterized Prof. Eickwort's approach to any subject involving arthropods. Fitzgerald's book will please the discriminating organismic biologist; it is a scholarly treatise that integrates a large body of information about the structure, physiology, behaviour and natural history of the conspicuous and successful lasiocampids placed in the genus *Malacosoma*. Those with specific interest in tent caterpillars or in the manifestations of gregarious and social behaviour among insects will thier own copy of this book as a first line reference. It should also provide compelling reading for those

interested in how the ecological significance of defoliators connects to their biological attributes. And "read" it you can! For me, it was like a good novel — both hard to put down and disappointing to finish.

The book is a comprehensive account of the North American *Malacosoma*, including lucid treatments of the following topics: systematics and zoogeography, the evolution and consequences of social behaviour, the natural history details of all life-history stages, interactions between the caterpillars and their host plants, foraging and thermoregulatory behaviour, natural enemies and population dynamics, and economic impact and management. There is also an unusual but useful chapter about maintaining colonies and approaches to classroom exercises to inspire budding tent caterpillar enthusiasts. The bibliography of more than 400 entries lists most important studies of North American *Malacosoma* published up to 1993 and reflects the broad coverage offered in the text; I noted only few omissions. The coverage of the Eurasian literature published in English is representative but less complete. I was modestly disappointed to find little about the numerous oriental *Malacosoma* species in the treatment. However, these species have not yet been well studied in relation to Fitzgerald's main topics, and to have included more would have required a hard slog through a difficult, obscure literature, and probably, close interaction with some Chinese lepidopterists.

As one should expect, the treatment is strongest in the areas of Fitzgerald's own considerable and significant research efforts. The discussions of sociality and the behaviours of tent-making, thermoregulation and foraging are rich, interesting and even spell-binding in places. The natural history shines and will appeal to those of us who delight in such details. The information about structure and function of *Malacosoma* caterpillars is thorough and nicely integrated, and serves to remind the reader that *M. americanum* was a favorite of the great morphologist R. E. Snodgrass. The chapter about interactions with host plants is forward looking and sound, if not thoroughly comprehensive with respect to secondary plant chemistry of aspen.

I found the two chapters about natural enemies and population dynamics the least satisfying and least uniform. An excellent and detailed summary of the literature about avian predators contrasts with a much weaker treatment of larval and pupal parasitoids. The coverage of egg parasitoids is detailed beyond their importance, but yet misses several interesting and significant papers. Fortunately, two recent publications, Parry (1996) and Williams et al. (1996), are now available to bring those interested in *M. disstria* up to date about the parasitoids of northern, aspen-feeding populations. Fitzgerald's treatment of pathogens of *Malacosoma* is also somewhat spotty, but there is a useful discussion about the nuclear polyhedrosis viruses of *Malacosoma* in the chapter about management. I liked the detailed discussion of weather as a factor in *Malacosoma* population regulation as it featured a biological rationale allowing for variable influence of a number of interacting, causal factors. Those of the "find-the-single-factor" persuasion, may be less impressed.

Overall, I give this book high marks. The account is generally comprehensive, as focused from an integrative behavioural, ecological and taxon-centred perspective. The book is well written, copiously illustrated, and nicely produced. There are only a few minor errors, generally of the sorts missed (or even exacerbated!) by automated spell chickens. There is a good index to assist in making quick finds in an already well-organized book. I also note the refreshing price of less than \$40 U.S. for a clothbound volume of this high quality, which is aimed at a somewhat restricted audience. This will make me squirm and protest the next time a publisher's representative "explains" why students must be gouged for textbooks. This book, in contrast today's standard university textbook, is excellent value and I expect it to have lasting value as a definitive treatment of the subject. If you like a book that places the insects on centre stage by placing biological science in a natural history framework, you'll enjoy *The Tent Caterpillars*.

- Parry, D. 1996. Larval and pupal parasitism of the forest tent caterpillar, *Malacosoma disstria* Hübner (Lepidoptera: Lasiocampidae) in Alberta. *The Canadian Entomologist* 127: 877-893.
- Williams, D. J. M., D. Parry & D. W. Langor. 1996. Sampling and identification of forest tent caterpillar parasitoids in the prairie provinces. Canadian Forestry Service, Northwest Region, Information Report NOR-X-345, 27 pp.

John Spence
University of Alberta
Edmonton, Alberta

Glenn B. Wiggins - 1996 - *Larvae of the North American Caddisfly Genera (Trichoptera)*. 2nd edition. University of Toronto Press, Toronto, Buffalo, London. 457 pages. ISBN # 0-8020-2723-7 (cloth). \$110.

This volume is an extensive revision of the first edition of the book published in 1977. The author includes new information up to the end of 1993 and incorporates numerous recently proposed advances in the classification of Trichoptera. The book is designed to serve as a comprehensive reference work for the larvae of 145 genera in 26 families and 3 suborders, representing all but 4 of the genera known to occur in North America.

The book is organized in a general and a systematic section. The General Section comprises the introduction and basic information on classification, biology, morphology and techniques. The author outlines the classification system used in the book and presents a thorough summary of relevant concepts on the evolution and habits of larval caddisflies. The concise chapters dealing with morphology and techniques provide the basis for successfully interpreting larval characters and using the keys which permit access to information on individual genera and families. The Systematic Section begins with a key to larvae of North American families of Trichoptera, followed by treatments of the various taxa. Suborders are presented in phylogenetic order, with families arranged alphabetically within them and genera arranged alphabetically within families. Each family synopsis includes a discussion of larval morphology and biology, an outline of subfamilial and tribal classification and a key to genera. Generic treatments are standardized on two pages each, with a page of short paragraphs on Distribution and Species, Morphology, Case, Biology and Remarks facing a page of illustrations of larval and case morphology.

The text throughout is well organized and clearly presented. The illustrations are excellent. The book amply meets the objectives of the author to provide an identification guide on caddisfly larvae for use by freshwater biologists, an introduction to Trichoptera for university students in aquatic biology and an atlas of trichopteran larval morphology for use by other systematists. Some aspects of the proposed changes to the higher classification have sparked vigorous debate among trichopterists, but will present no difficulty for those using the book as a reference.

This work represents the culmination of long years of persistent field work, meticulous life history studies and inspired hypothesis-testing by the author to fill gaps in knowledge of larval Trichoptera. I was fortunate as a young student of systematics and freshwater biology to participate in some of the field studies that contributed to this knowledge base. I have a vivid memory of standing knee-deep in a cold mountain stream high in the Rocky Mountains listening to the author calmly exclaim that we were the first to observe the larva of *Rossiana montana* and know what we were seeing. This outstanding book serves as testament to the dedication of the author to share his extensive special knowledge of our natural heritage with a wide audience.

Ian Smith, Ottawa

POSITIONS AVAILABLE

MSc opportunity. A research assistantship for at least one year and a research or teaching assistantship for a second year. Out of state fees waived. Assistantships about US\$11,000/year. Research must include natural enemies of rangeland weeds, especially snakeweed (genus *Gutierrezia*). I hope to expand our efforts to other range plants, especially "weeds" and I would welcome work incorporating data from snakeweed and other plants in the same habitat. If interested contact me at my e-mail address or write to: David B. Richman, Dept. of Entomology, Plant Pathology and Weed Science, New Mexico State University, Las Cruces, NM 88003, USA. (Posted Aug 29, 1996).

Insect ecology/plant ecology postdoc. A 1 year appointment (renewable 1 additional year) at the postdoctoral level in the Dept. of Entomology, Cornell University. Position starts Jan 1997, but negotiable. Successful applicant will assume primary responsibility for field and lab research on tri-trophic interactions among grapes, grape parasites (herbivorous mites and fungal pathogens), and natural enemies. Should have PhD in ecology or related discipline, with background in plant/parasite interactions and/or experience with mites. Starting salary is US\$23,000 for first time postdocs plus full benefits. Send CV, publication list, and names of three references to: Dr. Greg English-Loeb, Dept. of Entomology, New York State Agricultural Experiment Station, Cornell University, Geneva, NY 14456, USA; e-mail gmel1@nysaes.cornell.edu. (Posted Sept 26, 1996).

PhD study opportunity. A 3-yr PhD scholarship at the University of Haifa; includes 30,000 NIS per annum (ca. US\$800/mo) and the cost of tuition. Requested: MSc with final grade of A (>86%) in biology, preferably related to pollination biology. Contact me as soon as possible by e-mail (rabi306@uvm.haifa.ac.il) or fax (972-48-240312) and send the following: full records of the BSc and MSc studies (including marks), your thesis title, summary and the final mark and two letters of recommendation. Prof. Amots Dafni, Institute of Evolution, Haifa University, Haifa, Mt. Carmel 31905, ISREAL. (Posted Oct 10, 1996).

Developmental invertebrate biologist. Tenure-track position, Assistant Professor level, effective Jul 1, 1997 (subject to budgetary approval). Candidates must have recent PhD, at least one year of postdoc experience and a productive research record. Research focuses on animal development, using cellular/molecular techniques and employing invertebrate organisms as experimental systems. Expect to establish an externally-funded research program, and participate in teaching undergrad and grad classes, including the development of a 3rd-yr majors course in invertebrate biology and an advanced course in his/her area of expertise. Start-up research funds provided. Expect a reduced teaching load in the 1st 2 years. Submit a letter of application, outlining research goals, a summary of teaching experience and a CV to Dr. W. Chapco, Head, Department of Biology, University of Regina, Regina, SK, S4S 0A2, CANADA; e-mail william.chapco@leroy.cc.uregina.ca; fax 306-585-4894; tel 306-585-4231. Candidates should send at least 3 letters of reference sent to the address above. The closing date for application is Dec 31, 1996. (Posted Oct 11, 1996).

Graduate opportunity. 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 Jan 1997 and Jan 1998. For further information, contact: Reuben Kaufman, Dept. of Biological Sciences, University of Alberta, Edmonton, Canada T6G 2E9; e-mail: reuben.kaufman@ualberta.ca; fax 403-492-9234; tel 403-492-1279. (Posted Oct 16, 1996).

Entomologist. Anticipated entomologist vacancy with Maryland Dept of Agriculture Mosquito Control Section, Spring 1997, in Leonardtown; permanent position with full benefits; starting

salary is US\$23,000 to \$27,000. General requirements include: BSc; 2 years of experience in mosquito control, vector biology etc.; knowledge of economic entomology. Duties include: supervise mosquito control operations and surveys; recommend appropriate mosquito control practices; provides technical guidance and administrative assistance. FMI, contact Cyrus Lesser, Chief, Maryland Department of Agriculture, Mosquito Control Section, 50 Harry S Truman Parkway, Annapolis, Maryland 21401 USA; or Kevin Sweeney at sweenekj@mda.state.md.us. (Posted Oct 22, 1996).

Population Biologist The Department of Biology at Boston University invites applications for a tenure-track position at the rank of ASSISTANT, ASSOCIATE or FULL PROFESSOR in Population Biology to begin in the fall of 1997, pending administration approval. The successful candidate will be expected to have a strong organismal background and use molecular techniques to answer questions in social behavior, evolution, and/or conservation biology. Teaching responsibilities include an introductory course in genetics and an upper-level undergraduate or graduate course in area of specialty. Applicants should have a Ph.D. with post-doctoral experience, an active externally-funded research program, and a record of excellence in teaching. The successful candidate will complement an active group of faculty and graduate students in the Ecology, Behavior, and Evolution Program, and will have an opportunity to interact with other vital research groups and centers in the department and university. Interested applicants should send a curriculum vitae, statements of teaching and research interests, copies of three major reprints, and three letters of reference to: Thomas H. Kunz, Chair, Population Biology Search Committee, Department of Biology, Boston University, Boston, MA 02215. Boston University is an Equal Opportunity/Affirmative Action Employer. Application review will begin on December 1, 1996. Closing date is January 15, 1997.

Biology The Department of Biology, University of Ottawa, invites applications for a tenure-track position at the level of Assistant Professor starting July 1, 1997. The Department offers major opportunities for collaboration with active research groups in many academic, government and private sector organizations in the Ottawa area. Specifically, the Department is seeking an animal physiologist able to contribute to the significant Departmental strength in comparative animal biology. The successful applicant should have a PhD, preferably postdoctoral experience, and demonstrated capacity to establish an independent research program. Preference will be given to an individual able to teach and supervise students in both French and English. Applications should include a curriculum vitae, documentation on teaching experience, a short description of research directions, and arrange for 3 letters of reference to be sent to the Department. Applications are due no later than December 15, 1996 and should be sent to Dr. T.W. Moon, Chair Search Committee, Department of Biology, University of Ottawa, P.O. Box 450, Stn A, Ottawa, ON K1N 6N5; tel (613) 562-5800, ext 6002, FAX (613)562-5486, e-mail tmooon@oreo.uottawa.ca. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Equity is a University policy. The University strongly encourages applications from women.

Biologie Le département de biologie de l'Université d'Ottawa cherche à combler un poste de professeur(e) adjoint(e) pouvant mener à la permanence et commençant le 1er juillet 1997. Le département offre des possibilités majeures de collaboration avec des groupes de recherche actifs dans plusieurs organisations académiques, gouvernementales, et du secteur privé dans la région d'Ottawa. Spécifiquement, le département cherche un physiologiste animal capable de s'intégrer à l'équipe départementale active en biologie animale comparée. Le/la candidat(e) choisi(e) devra avoir un doctorat, de l'expérience post-doctorale si possible, et une capacité prouvée d'établir un programme de recherche indépendant. La préférence sera accordée à un individu capable d'enseigner et de superviser des étudiants en français et en anglais. Les demandes devraient inclure un curriculum vitae, des informations sur l'expérience en enseignement, et une brève description du programme de recherche anticipé. Les candidat(e)s devront aussi demander à 3 répondants de

soumettre des lettres de recommandation. Les demandes doivent être reçues avant le 15 décembre, 1996, et être adressées au professeur T.W. Moon, Directeur du comité de sélection, Département de biologie, Université d'Ottawa, Case postale 450, Succursale A, Ottawa, Ontario K1N 6N5; téléphone: (613) 562-5800, ext. 6002, FAX: (613) 562-5486, courrier électronique: tmoon@oreo.uottawa.ca. Conformément aux exigences des services canadiens de l'immigration, cette annonce s'adresse aux citoyens canadiens ou aux immigrants reçus. L'Université a une politique d'équité en matière d'emploi. Les femmes sont fortement encouragées à poser leur candidature.

Entomologist. I am currently studying the effects of linear developments (roads & rails) in Banff National Parks Bow Valley corridor on wildlife populations, particularly medium and large-sized mammals. To analyze the impacts at the small end of the terrestrial fauna spectrum, I would like to enlist the support and/or collaboration of an entomologist to help assess the effectiveness of highway mitigation measures such as under- and overpasses in maintaining habitat connectivity among non-flying insects, principally Coleoptera (carabid beetles) and Orthoptera (short and long-horned grasshoppers). Should anyone be interested in the proposed collaboration, please contact me at the following address: Dr Anthony P Clevenger, Wildlife Section, Banff National Park, Box 900, Banff, AB T0L 0C0; Tel: (403) 760 1371, Fax (403) 762 3240; e-mail: tony_clevenger@pch.gc.ca.

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 1997**. The committee will evaluate all applications by 30 April 1997 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 de promouvoir les études graduées en entomologie, la Société d'Entomologie du Canada offrira deux bourses de voyage associées à la recherche. Celles-ci seront décernées annuellement sur une base compétitive. Le but de ces bourses est de permettre aux étudiants gradués d'élargir les horizons de leur formation. Les bourses, d'une valeur maximale de \$2,000 permettront à des étudiants de 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.

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

Évaluation

Le 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 1997** au Secrétaire de la Société. Le comité évaluera toutes les demandes pour le 30 avril 1997 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 1997 and Keith Kevan Scholarship

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.

In memory of Dr. D. Keith McE. Kevan, the Entomological Society of Canada is also offering one postgraduate award of \$1,000 to assist graduate students studying systematics in entomology. The award will be made on the basis of high scholastic achievement and excellence in insect systematics

Invitation for Applications

Eligibility: Applicants for either scholarship must be members of the Entomological Society of Canada.

- **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 1995 and 31 December 1997. 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.

- **Keith Kevan Scholarship:** The successful applicant must be a graduate student at the time of application, studying at a Canadian university or be a Canadian citizen studying abroad.

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 **11 June 1997**. Please specify if you are applying for the Postgraduate Award or the Keith Kevan Scholarship.

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 1997.

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 this 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
Agriculture and Agri-Food Canada
P.O. Box 37, Mount Pearl, NFLD, A1N 2C1
Telephone: 709-772-4763, Fax: 709-772-6064
E-Mail: Dixonpl@em.agr.ca

La Société d'entomologie du Canada Bourse pour Etudiants Post-Gradués 1997 et Bourse Keith Kevan

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.

Aussi, en mémoire de Dr. D. Keith Mc.E. Kevan, la Société d'entomologie du Canada offrira une bourse d'un montant de \$1,000 pour aider les étudiants qui entreprennent des études en taxonomie des insectes. Cette bourse est accordée en raison des critères d'excellence académique et de la prééminence en taxonomie des insectes.

Avis

Éligibilité: Candidats pour chacune des bourses doivent être membres de la Société d'entomologique de Canada.

-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 1995 et le 31 décembre 1997, 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'inscrit en vue de compléter l'obtention de crédits, n'est pas éligible à la bourse.

- Bourse Keith Kevan: Le(La) candidat(e) doit être étudiant(e) gradué(e), inscrit(e) à une université canadienne ou citoyen canadien étudiant à l'étranger.

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 **11 Juin 1997**. 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 1997.

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
C.P.Box 37, Mount Pearl, Terre-Neuve, A1N 2C1
Telephone: 709-772-4763, Telecopie: 709-772-6064
E-Mail: Dixonpl@nfrssj.agr.ca

MEETINGS

North American Benthological Society - 45th Annual Meeting

Southwest Texas State University, San Marcos, Texas, May 26-30, 1997. The 45th Annual Meeting of the North American Benthological Society will be held on the campus of Southwest Texas State University in the City of San Marcos, Texas on May 26-30, 1997. The program features four days of invited and contributed presentations, and workshops on the structure and function of benthic communities in aquatic ecosystems. The Plenary Session of the Meeting will be: "Aquatic Endangered Species: Their Role in Ecosystems and Water Quality and Quantity Issues." Some special sessions include: "Macroecology in Aquatic Ecosystems," "Environmental Problem Solving," "Ecology of Karst Aquatic Ecosystems," "Urban Rivers," and "Systematics and Ecology of Aquatic Invertebrates." Workshops are planned on: "In-stream Flow Determinations" and "Communications Skills for Benthic Ecologists: The Public, Media, State, and Federal Agencies as Audiences." Abstracts are due December 16, 1996. For more information contact:

Dr Tom Arsuffi, Program Chair, Dept. of Biology -- Aquatic Station, Southwest Texas State University, San Marcos, TX 78666, (512) 245-2284, Fax (512) 245-7919

Dr. Glenn Longley, Local Arrangements Chair, Edwards Aquifer Research and Data Center, Southwest Texas State University, San Marcos, TX 78666, (512) 245-2329, Fax (512) 245-2669

Fiftieth Anniversary Meeting of the Lepidopterists Society

July 9-13, 1997, Yale University, New Haven, Connecticut, USA. We welcome contributed papers and notes. Contact: Bernard Landry, Environmental Science, Policy and Management, 201 Wellman Hall, University of California, Berkeley, CA 94720, USA. Further information on the Web Site at: <http://www.furman.edu/~snyder/snyder/lep>

Society for Invertebrate Pathology Annual Meeting August 24 - 29, 1997, Banff, Alberta.

The 30th annual meeting of the Society for Invertebrate Pathology will take place at the Banff Centre. The majority of the Symposia and Contributed Papers will deal with many aspects of the development of pathogens as microbial control agents of insects. Deadline for submission of abstracts is 1 April.

For information on the scientific program and submission of abstracts, please contact either Andrew Keddie, Department of Biological Sciences, University of Alberta, Edmonton, AB T6G 2E9, Tel: 403-492-0455; Fax 403-492-1767; akeddie@gpu.srv.ualberta.ca or Martin Erlandson, AAFC Saskatoon Research Centre, 107 Science Place, Saskatoon, SK S7N 0X2, Tel: 306-956-7276; Fax: 306-956-7274; erlandsonm@em.agr.ca.

For registration information please contact Mark Goettel, AAFC Lethbridge Research Centre, P.O. Box 3000, Lethbridge, AB T1J 4B1, Tel: 403-317-2264; Fax: 403-382-3156; goet-tel@em.agr.ca.

MISCELLANEOUS

Noms communs des insectes au Canada

La Société d'Entomologie du Québec a produit récemment une version imprimée de la disquette intitulée "Noms communs des insectes au Canada" et éditée, en 1993, par Belton, E. M. et D. C. Eidt de la Société d'Entomologie du Canada. Cette liste comprend plus de 1600 noms d'insectes présentés par ordre alphabétique en français, anglais et latin. Des exemplaires au prix de \$10 chacun sont disponibles au Secrétariat de la SEQ à l'adresse suivante: Marcel Mailloux, secrétaire, 472 rue Maisonneuve, St-Jean-sur-Richelieu, Qc, J3B 1G2. Faites votre chèque ou mandat-poste au nom de la Société d'Entomologie du Québec.

J. Delisle

Heritage Committee wants Great Papers

The Heritage Committee solicits nominations for personal and scientific papers from great Canadian entomologists for the historical purpose of archiving and compiling bibliographies and personal sketches. Please send all contributions or suggestions to Dr. R. deBoo, at 805-327 Maitland St., Victoria, B.C. V9A 7G7. Tel: (250) 380-0707.

Young Entomologist's Society, Inc.

1915 Peggy Place, Lansing, MI 48910-2553 tel/fax: 517-887-0499, e-mail: yesbugs@aol.com

Dear E.S.C. Members and Governing Board:

I would like to once again take this opportunity, on behalf of the Young Entomologists' Society, to request your Societies' aid in supporting what we believe to be a valuable and unique entomological outreach program. Our mission is to assist young people, educators, and amateur entomologists with a combination of programs, publications, and educational materials that make it possible to learn more about insects and spiders in dynamic, innovative, and hands-on ways. Last year we served 567 members (from all over the United States and Canada) plus an additional 79,000 individuals through our educational outreach programs. In recent years we have continued to expand our educational programs and services, and we now offer 9 special publications, three periodicals, teacher and student handouts, teacher workshops and training, educational outreach programs in schools, daycares, and libraries, and an arthropod information/resource referral center.



**Cody George and the 4th Newfoundland
Entomology Weekend**

Specifically, we are requesting assistance in the amount of \$300.00 (Canadian), to help us further our goals of working with young people who are insect and spider enthusiasts. In the coming year we will be launching an entomological web-site designed especially for kids and teachers, and we are particularly excited about this.

We could not do the good things we do if it were not for the members of the Entomological Society of Canada!

Sincerely,
Dianna K. Dunn
Executive Director

Opportunity for Latin American students to come to ESC meetings.

The AUCC (Association of Universities & Colleges of Canada) and IDRC have a scholarship programme to encourage linkages with Latin America. One part of their programme is for scholarships to allow Graduate Students in Latin American Universities to come to Canadian conferences. The upcoming ESC/ESA Alberta meetings with the theme "Insects and Mother Earth" would qualify in the "environmental" and "health" priorities of the AUCC/IDRC programme. If you know of students from Latin America who would like to compete, please send their e-mail address to Peter Kevan (pkevan@uoguelph.ca) who will forward the application details to the student and to you. Letters of reference are needed, but all will be explained in the e-mail of the application requirements. DEADLINE: 15 January, 1997.

Peter G. Kevan
Dept. of Environmental Biology
University of Guelph, Guelph
Ontario, N1G 2W1, Canada

Exchange of *Stephanopachys* Specimens Desired

A German scientist would like to obtain specimens of *Stephanopachys* from the Holarctic region. He is generally interestewd in Lyctidae and Bostrichidae (Coleopetera) and would like to contact Canadian scientists with similar interests. Contact: Klaus-Ulrich Geis, Department of Botany and Sight Studies, Forest Research Institute of Baden-Wurttemberg, Post Box 708, 79007 Freiburg, Germany

Helping Children Beat the Odds

The Canadian Public Health Association has launched a national public education and awareness program to increase support for their program to immunize children against six deadly communicable diseases around the world in collaboration with 20 other health associations and governments. They seek partners to participate in this national awareness campaign. Contact: Robert Burr, Canadian Public Health Association, 1565 Carling, Suite 400, Ottawa K1Z 8R1

The AG-Rep And Bull

"Now that we have checked this pasture for grasshoppers, let's go and talk to the rancher. He knows more about his rangeland than I do, and he may be able to tell us if there are any threatening infestations that we should know about." With that Dave, the Agricultural Representative for Yorkton, and Jason, the entomologist from the Dominion Entomological Laboratory in Saskatoon, got into the former's car and headed for the ranchhouse. The owner was home and soon answered all the inquiries concerning the insects on the pastures under his control. There did not appear to be any threatening hordes of troublesome grasshoppers in his pastures, so the two men prepared to leave the ranch.

"Before you leave," said the rancher, "I want to show you my prize bull. He's in the bull-pen in the barn; I'm keeping him away from the cows just now. Don't want any late-summer calves next year." The men walked to the barn and inside was the biggest, horned Hereford bull Jason had ever seen. "Come on into the pen," said the rancher, "he's gentle and loves to have company." With that he climbed over the partition into the pen and scratched the big animal's forehead as the bull gently lowered his head, apparently enjoying the friendly contact with his owner.

Jason also climbed into the pen and soon he too was stroking and petting the animal. While standing near the wall and gently scratching the animal's forehead, the huge beast suddenly stepped forward with his head touching the lower abdomen of the entomologist. His forward movement pressed Jason against the wall and the two forward-projecting horns of the bull dented the boards on either side of the now-frightened man. With 2200 pounds of bull holding him against the wall, it was an inescapable prison. If the head of the animal had been on the man's chest he would have crushed his rib cage. "Don't panic," thought Jason, "there must be way out of this."

Just then the rancher got behind the animal and delivered a swift kick to the bull's scrotum. The bull immediately hunched his back and lowered his head; the "horned" prison gates were opened. Jason quickly made his escape and exited the pen in one leap over the boards. The other two men also beat a hasty retreat out of the pen. The behaviour of a bull cannot be predicted once he has been kicked in the family jewels! However, Jason and the Agr-Rep did not wait to find out; they beat a hasty retreat to Yorkton.

Contributed by Paul Riegert

ADVERTISEMENTS

Rates for Advertising in the Bulletin

The following rates apply to clients wishing to advertise in the ESC Bulletin if they provide electronic copies to the editor:

Full page: \$100.00;

Half page: \$60.00;

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Single sentence: \$10.00.

For scans done by the printer, an extra charge of \$30.00 is required.

SOCIEDADE BRASILEIRA DE ENTOMOLOGIA **Caixa postal 9063 - CEP: 01065-970 - Sao Paulo - SP, Brasil**

"A Catalogue of the Fannidae and Muscidae (Diptera) of the Neotropical Region" edited by Claudio J. Barros de Carvalho, 232 pp. The catalogue includes complete bibliographical references on each taxon and, at specific level, institutions where types are preserved, type locality and geographical distribution. US\$20.00.

"Catalogue of the Cerambycidae (Coleoptera) of the Western Hemisphere" by Dr. Miguel A. Monné, in 22 parts. Total price: US\$130.00.

The mailing is included in the price of all publications. If you are interested, contact the Sociedade Brasileira de Entomologia, Caixa Postal 9063, CEP 01065-970, Sao Paulo, SP, BRAZIL. The cheque must be payable to the Sociedade Brasileira de Entomologia.

Canada Communication Group - Publishing

Entomology Publications (catalogue number P62-46-1996) is a free bilingual catalogue put out by the CCG-P, the publisher for the Canadian Federal Government. It lists products developed by the departments of Forestry and Agriculture and Agri-Food. *Entomology Publications* would be of interest to entomologists, silviculturists, ecologists, biologists, agronomists, natural scientists and horticulturalists. It can be ordered from: CCG-P, Ottawa, Ontario K1A 0S9. Tel: (819) 956-4800; Fax: (819) 994-1498.

BIOSIS on Compact Disc

BIOSIS, a comprehensive bibliographic database covering multiple genetics disciplines, is now available on CD from Ovid Software Records are selected from 6000 scientific journals and 2000 meetings. Contact: Irene Jacobs, BIOSIS, Marketing and Sales Department, 2100 Arch St., Philadelphia PA 19103-1399, USA Web access: <http://www.biosis.org/htmls/press/071296>

Insect World International

The only full colour magazine devoted exclusively to insects and other invertebrates. Primarily an educational publication, it is aimed at both professionals and amateurs. US\$39.00 introductory offer. Contact: Insect World International, PO Box 44, Droitwich, Worcestershire, WR9 8YJ, England

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393 Winston Ave., Ottawa, Ontario K2A 1Y8

**Application for membership - (new members only)
Demande d'adhésion (nouveaux membres seulement)**

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Décrivez vos intérêts en utilisant jusqu'à
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Note: Current members of the ESC who have retired from active employment may relinquish active membership and become emeritus members; eligible members please check the appropriate box. Emeritus members must return their renewal form each year in order to remain members. / A noter: Les membres de la SEC qui ont pris leur retraite peuvent abandonner leur adhésion et devenir membres émérités; les membres qui sont éligibles doivent indiquer dans la case appropriée. Veuillez noter que les membres émérités doivent renouveler leur abonnement à chaque année afin de demeurer membres.

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