

Entomological Society of Canada Société Entomologique du Canada

Bulletin

Vol. 12, No. 4, December-décembre, 1980

Editorial	59
Policy for Scientific Notes in The Canadian Entomologist	59
Xerces Society Research Grants	59
Report of the ESC President (Rapport du Président)	60-66
Cana Coll Foundation	66
Strawberry Cutworm, a new English name	66
Call for Nominations	67
Gift Subscriptions of the Canadian Entomologist	67
Canada Biting Fly Centre	67
Gold Medal Address by G.E. Ball	68-71
Biography of G.E. Ball (pictures)	72-73
John M. Webster to Associate Academic Vice-President	73
Biography of H.V. Danks, Hewitt Award Winner (pictures)	74-75
Sam Loschiavo in Mexico; Curtis Sabrosky retires	75
Action of Governing Board on 4-5 and 8 October	77-79
Minutes of Annual General Meeting	79-82
Marcel Hudon speaks in Vienna	82
A.W.A. Brown gives AMCA Memorial address	82
Indian journal named for the late L.C. Coleman	82
ESC 1981 Budget	83
Committee Reports (1980): Secretary, Finance, Publications, Scientific	
Editor, Bulletin Editor, Science Policy/Public Education, Biological	
Survey of Canada (Terrestrial Arthropods), Study of the Cost of	
Destructive Insects in Canada, Common Names of Insects, By-Laws,	
Employment, Scholarship, Membership, CSAC	84-95
1981 ESC Graduate Scholarship Winner (Miss McGinnis picture)	95
10th Annual Photo Salon	95-97
Members' Response to Questionnaire about ESC	99-100
NRC Research Journals: Publication Policy	100-101
Association des Entomologistes Amateurs du Québec	102-103
Frère F. Laliberté receiving Criddle Award	103
Meetings	103
Book Reviews, Book Notices, Books Received	104-109
International Commission on Zoological Nomenclature	109-110
Recent Deaths: P.N. Vroom, J.A. Rudinsky	110
Advertisements	76, 98, 110, 113
Positions Available - Entomologists Available	111, 117
Officers of Affiliated Societies (ESBC, ES Alta., ES Ont.)	112
BioQuip Undergraduate Scholarship	113
List of Chairmen and Members of Committees (1980-81)	114, backcover

D.M. Davies

Bulletin Editor

Cover Design: M.A. Sydor

Published by the
Entomological Society of Canada
1320 Carling Avenue, Ottawa K1Z 7K9

EDITORIAL

The Entomological Society of Canada should be proud of the high calibre and dedication of its Directors over the years. This Society has initiated a number of important studies and surveys that evaluate the importance of entomology and entomologists in the economy of Canada. Some of the recent projects and reports are "Entomological Manpower in Canada - Current Status and Future Projections 1976", "The Funding of University Research in Entomology 1978", "The Biological Survey of Canada (Terrestrial Arthropods)" continuing, "A Study of the Cost of Destructive Insects in Canada" now underway, and a new proposal for "a brief on the need for permanent government-supported research concerned with the role of insects in development of renewable natural resources in Canada".

In his Report (see this Bulletin), the President of ESC summarizes the generally favourable responses to the Society's activities as reflected in replies to a questionnaire recently circulated to members (see the summary of questionnaire in this Bulletin). Members can continue to have their views publicized by sending them for inclusion in future issues of the Bulletin.

I should like to draw special attention to the well-written and stimulating Gold Medal Address by George E. Ball in this Bulletin. He paints an exciting story of adventures in insect systematics and the basic importance of this field to entomology. He pays tribute to the Biological Survey of Insects of Canada and to its Director, Dr. Hugh V. Danks, recent winner of the Hewitt Award. He speaks of the superb Handbook series started by entomologists in the Biosystematics Research Institute. He also emphasizes the importance of graduate students in university research. He speaks of the general pattern of education at the graduate level as being "intensely interested young people learning from one another, with general guidance from more senior people of similar interests".

It is heartening to realize that strong new amateur entomological societies are active in the provinces of Quebec and Ontario. L'Association des Entomologistes amateurs du Québec (see this Bulletin) had an interesting input of displays of insect collections and lantern slides at the recent annual meeting of ESC and SEQ in Quebec City and has its own journal. The Toronto Entomologists' Association, with other interested amateur entomologists, participated in a special program at the recent annual meeting of the Entomological Society of Ontario in London and has produced several publications. We hope to have more news from amateur entomologists for later Bulletins.

D.M. Davies

CANADIAN ENTOMOLOGIST — NOTES

A decision of the Publications Committee and the Editorial Board of the ESC, meeting at Quebec, was to restrict Scientific Notes to two printed pages.

Au congrès des Sociétés Entomologiques du Québec et du Canada à Québec, le Comité des Publications et le Conseil d'Éditeurs ont décidé que les Notes Scientifiques seront limitées à deux pages imprimées.

RESEARCH GRANTS TO CONSERVE LAND ARTHROPODS

The Xerces Society, an international non-profit scientific organization, offers modest grants to support scientific research related to conservation of terrestrial arthropods. Proposals explicitly focused on potential endangered species or management of terrestrial arthropod populations and their habitats will be given preference. Grants will usually be several hundred dollars (U.S.A.). Young investigators and those without formal professional affiliation are encouraged to apply. Deadline for 1981 proposals is 30 January 1981. For further information, write Dr. Francie Chew, Xerces Grants Committee, c/o Department of Biology, Tufts University, Medford, Massachusetts 02155, U.S.A.

REPORT OF PRESIDENT

Quebec City, October 1980

In this report to the Annual General Meeting, I will deal with three questions that most presidents of the E.S.C. probably have asked themselves. What do the members think about the Society? How well is the Society responding to the wishes of the members? Is entomology in Canada responding adequately to the scientific and educational demands it faces? The comments on the extent to which the Society is responding to the wishes of the members constitute a report on the major actions of the Board and Executive during the past year. Detailed reports on these and the many other activities of the past year are printed in this Bulletin.

In answering these questions, I have been aided by the responses to the questionnaire that was sent to the members this year. The 355 responses (39% of the membership) indicated that receipt of the Canadian Entomologist was the most important reason for belonging to the E.S.C., followed closely by a desire to support the E.S.C. as a voice for entomology. The ability to publish in the Canadian Entomologist was also an important reason for belonging, especially for members of the U.S.A.

Over half (57%) of the respondents included comments, covering almost every aspect of Society business. These comments are being studied by the Executive, Governing Board and appropriate committees. They also give me a series of quotations to which I can respond. Here are some of the important topics:

1. The Canadian Entomologist is the most important activity of the Society and every effort should be made to maintain its high quality.
2. The Bulletin has considerable support as a means for internal communication and morale. Many members, including the Bulletin Editor, would like to see more news of members. Here, I quote one comment, *"Make it more nasy (but this depends on response from members)"*.
3. The major thrusts of our Science Policy Committee, the development of mechanisms to positively influence national and regional policies for science and entomology and to increase public awareness of entomology were supported by nearly all the comments. A very few held the view that the E.S.C. should not diversify away from the role of publishing a professional journal. This type of member, to quote another comment, *"est trop isolée, trop dans une tour d'ivoire"*.
4. We should be doing more to encourage youth and amateurs to become active within the Society.

There were many more general and specific comments on Society operations, annual meetings, entomology education and need for emphasis on applied entomology in Canada. A report on the results of the questionnaire is available on request.

How well is the Society responding to the wishes of its members? We are, I believe, responding in most of the areas noted by the responses. Here are some examples:

1. Canadian Entomologist remains one of the most respected entomological journals in the world. Our current Editor and the Associate Editors are successfully striving not only to maintain and improve quality but also to reduce the time between submission and publication. Those who wished for a reduction in page charges will be pleased that we received an NSERC grant for the current year that has allowed us to reduce the charge per page by \$20.00. We have arranged to increase the number of papers that have French Resumes. An arrangement with Dr. C. Cloutier,

RAPPORT DU PRESIDENT

Dans ce rapport, j'analyserai 3 questions qui ont probablement retenu l'attention des présidents antérieurs. Qu'est-ce que les membres pensent de notre Société? Est-ce que notre société répond bien aux besoins de ses membres? Est-ce que l'entomologie au Canada répond adéquatement aux attentes scientifiques et éducatives d'aujourd'hui?

La façon dont la Société répond aux besoins actuels de ses membres est une question qui a déjà été traitée dans le rapport portant sur les activités principales de l'exécutif au cours de la dernière année. Les comptes rendus sur ce sujet en particulier et de plusieurs autres figurent dans ce bulletin.

En cherchant les réponses à ces questions, ma tâche a été facilitée grâce à l'envoi d'un questionnaire qui a reçu cette année 355 réponses (39% des membres). On y mentionne en particulier que l'abonnement au Canadian Entomologist est la raison majeure de l'adhésion des membres à la S.E.C. et que le rôle de la Société en tant que porte-parole des entomologistes viendrait en second lieu. Une autre raison d'adhésion est le droit qu'ont les membres de publier dans cette revue en particulier pour ceux qui sont des États-Unis.

Plus de la moitié (57%) des répondants ont ajouté des commentaires qui touchent presque tous les champs d'activité de la Société. Ces commentaires sont présentement à l'étude par les membres de l'exécutif du bureau de direction et des comités concernés. Comme il n'est possible d'apporter des réponses à quelques-uns de ces commentaires, je prendrai ici l'occasion de vous les présenter.

1. L'activité la plus importante de la Société est la publication du Canadian Entomologist et tout devrait être fait pour assurer le maintien de sa haute qualité.
2. Le Bulletin est perçu comme un moyen d'assurer la communication et le maintien du moral à l'intérieur de la Société. Plusieurs personnes dont l'éditeur du Bulletin, en particulier, apprécieraient y voir publier plus d'informations concernant nos membres. Une des suggestions, entre-autres, était "de rendre le Bulletin plus informatif" (en autant que les membres dont d'accord).
3. La majorité des répondants reconnaissent l'importance du rôle que joue le comité des politiques scientifiques (Science Policy Committee) dans a) l'élaboration d'approches qui permettront, à la Société de mieux influencer les politiques nationales et provinciales concernant la sciences et l'entomologie et b) la sensibilisation du public à l'entomologie. Quelques membres pensent toutefois que la Société ne devrait pas trop se diversifier et s'en tenir à son rôle principal qui est d'assurer la publication de sa revue scientifique. Je répondrai au membre que passe une telle remarque en citant au autre commentaire: qu'il est "trop isolé, trop dans une tour d'ivoire".
4. Nous devrions encourager plus fortement les jeunes et les amateurs à s'impliquer activement dans notre Société.

Plusieurs autres commentaires d'ordre général et scientifique ont été faits à l'égard des activités de la Société, des rencontres annuelles, de l'enseignement de l'entomologie et de l'importance de la recherche appliquée en entomologie. Les résultats de ce questionnaire seront disponibles sur demande.

Comment la Société répond-elle aux besoins de ses membres? Suite aux résultats du questionnaire, je dirais que la Société répond assez bien aux attentes des membres dans la plupart des activités entreprises. Je vous cite ici quelques exemples:

1. Le Canadian entomologist demeure l'une des revues entomologique les plus respectées internationalement. Notre éditeur de même que les éditeurs associés s'efforcent avec succès, non seulement de maintenir et d'améliorer la qualité de la revue mais également de réduire le temps entre la soumission et la publication des articles scientifiques. Les membres qui espéraient voir une réduction des frais de publication seront heureux de savoir que la Société a reçu un octroi du CRSNG pour l'année 1979-80 qui permettra une réduction de l'ordre de \$20. la page. Nous avons déjà fait des arrangements pour augmenter le nombre de résumés écrits en français. Le Dr. Cloutier de l'Université Laval assurera la traduction de la plupart des résumés à l'exception de ceux provenant

Université Laval, provides translations of the abstracts of papers received from entomologists outside the Canadian governmental service. Recently, we concluded an agreement with Agriculture Canada to provide French Resumes with their papers. The Canadian Entomologist will soon include a French Resume with every paper in English.

2. The new Bulletin Editor, Dr. Douglas Davies, has not yet completed his first year. We expect the Bulletin to meet the needs of the members but it can improve only if all members remember to send personal items to the Editor.
3. Our Science Policy Committee completed an analysis of the courses open to the Society and has concluded that we should become better informed than any other body on problems of high entomological priority in Canada and to take initiatives to bring these to the attention of agencies appropriate to their solution. At the same time, we have continued and expanded our role as a contractor on entomological problems not being addressed by other organizations. Our initial contract for a pilot study for a Biological Survey of Canada has developed to the point where the National Museum of Natural Sciences now funds both a Secretariat and a Scientific Committee through contracts with the E.S.C. Our proposal for a study of Insect Losses in Canada was submitted this summer. We have been advised that Agriculture Canada is favorably inclined toward supporting this proposal and negotiations are in progress.

We have not solved the difficult problem of increasing the level of public awareness and appreciation of entomology. After combining the Public Education Committee with the Science Policy Committee for 2 years we have concluded that they should be separated. Any member wishing to become active in this area will be welcomed by our incoming President, Dr. Loschiavo, and by the Chairman of the Committee, Dr. Shorthouse.

Two of the responses on participation in Society affairs highlight a continuing problem: how to involve a wider spectrum of members, i.e. "Recruit more young scientists onto the Governing Board and committees and then remove the 'old boy' image that has been preceived by younger scientists", "Meilleure intégration des francophones au sein de la S.E.C.". How can we achieve this? Some older members do not wish to involve young scientists because they believe that time spent on E.S.C. activities can have bad effects on a budding career. I reject this view because the contacts with entomologists from across the country and from a wide variety of specialties will more likely enhance a career in research or teaching. Each year we search for volunteers for committee work but can easily overlook young scientists. If you, a young entomologist, wish to volunteer your services or if you know young entomologists that are available, please talk or write to the President. Service on the Governing Board is also open. Election as a Director-at-Large is difficult for an entomologist who is not widely known. However, each regional Society has a representative on the Governing Board. I suggest that these societies send some younger members to represent them. The situation is the same for francophones. Few Quebec entomologists are known outside the province. I invite all francophone entomologists to speak to the President if they wish to work on our committees. Also, the role of the Director selected by the S.E.Q. is very important. This Director must give the other directors information and ideas that would lead to better integration of francophones. In addition, this Director will become better known across Canada. As in politics, you can't win elections by staying at home.

des entomologistes du Gouvernement Fédéral. Nous avons récemment conclu une entente avec Agriculture Canada qui assurera elle-même la traduction française de ses propres résumés. Bientôt tous les textes publiés dans le Canadian Entomologist auront donc un résumé français.

2. Le nouvel éditeur du Bulletin, le Dr. Douglas Davies, n'a pas encore complété sa première année d'exercice. Nous nous attendons à ce que cette revue puisse répondre aux besoins des membres, toutefois la tâche de l'éditeur sera d'autant plus facile si tous les membres lui soumettent des items personnels.
3. Notre Comité des Politiques scientifiques a complété l'analyse des options qui s'offrent à la Société et en a conclu que nous devrions être mieux informés que quiconque des problèmes entomologiques prioritaires au Canada et être en mesure de prendre les initiatives nécessaires pour en informer les agences concernées en vue de les solutionner. Nous avons poursuivi et étendu notre rôle en tant que responsables des problèmes entomologiques qui ne sont pas abordés par d'autres organismes. Notre contrat initial en vue d'une étude pilote portant sur l'inventaire biologique au Canada s'est développé au point que le Musée National des Sciences Naturelles subventionne à la fois le Secrétariat et le Comité scientifique par l'entremise de contrats avec la S.E.C. La demande que nous avons faite pour une étude portant sur les pertes occasionnées par les insectes a été soumise cet été. Agriculture Canada s'est montré intéressé à appuyer financièrement un tel projet, et les négociations sont en cours. A date nous n'avons pas trouvé de solutions satisfaisantes pour augmenter auprès du public en général, la connaissance et l'intérêt porté à l'entomologie. Après avoir fondus ensemble les comités de l'Education publique et des Politiques scientifiques pour les deux dernières années, nous avons décidé qu'ils devraient être séparés à nouveau. Tout membre qui désire être actif dans le domaine de l'Education publique sera bien accueilli par notre nouveau président, le Dr. Loschiavo, et par le président du Comité, le Dr. Shorthouse. Deux des réponses au questionnaire concernant les activités de la Société ramènent sur le tapis un problème persistant: Comment pouvons-nous impliquer un plus grand nombre de membres c.a.d. "Comment recruter plus de jeunes chercheurs sur le bureau de direction afin de rajeunir l'image de notre Société aux yeux des plus jeunes membres"; "meilleure intégration des francophones au sein de la S.E.C.". Comment pouvons-nous y arriver? Certains membres s'opposent à l'idée d'impliquer davantage les jeunes chercheurs sous prétexte que le temps consacré aux activités de la S.E.C. peut retarder l'avancement d'une carrière scientifique. Je rejette ce point de vue car je considère que les possibilités de contacts avec des entomologistes spécialisés dans plusieurs domaines différents ne pourront qu'améliorer la carrière des jeunes membres tant du point de vue de la recherche que de l'enseignement. A chaque année, nous sommes à la recherche de personnes-ressources qui seraient intéressées à siéger sur nos comités, mais nous passons souvent sous silence les plus jeunes. Si vous, jeunes entomologistes, êtes intéressés à offrir vos services ou si vous connaissez de jeunes entomologistes qui sont disposés à le faire, veuillez s'il-vous-plait en informer notre Président. La participation des jeunes sur le bureau de direction n'est pas à négliger non plus. On sait toutefois que l'élection d'un conseiller délégué (director at large) est chose difficile lorsque le candidat est un entomologiste plus ou moins bien connu. Cependant, nous ne devons pas oublier que chaque Société régionale a son représentant sur le bureau de direction. Je suggère donc que ces Sociétés nomment des membres plus jeunes pour les représenter à la Nationale. Pour les francophones c'est la même chose. Peu d'entomologistes québécois sont bien connus à l'extérieur de la Province. J'invite donc tous les francophones qui désirent travailler sur nos comités à contacter le Président de la S.E.C. De plus le rôle du directeur nommé par la S.E.C. est très important. Il doit être en mesure d'informer les autres directeurs des moyens à prendre pour parvenir à une meilleure intégration des francophones. En conséquence ce directeur sera mieux connu à travers le Canada. Comme c'est le cas en politique, on ne peut gagner ses élections en restant à la maison.
4. La S.E.C. croit que l'encouragement des jeunes et des amateurs est important. Nous avons encouragé les activités des Sociétés régionales dans ce domaine parce que nous croyons qu'elles sont essentielles au succès des programmes de chacune des régions. La S.E.C. ne devrait pas s'impliquer directement, cependant nous sommes intéressés à recevoir des suggestions qui nous aideraient à mieux appuyer les efforts régionaux.

L'entomologie au Canada ne répond pas de façon satisfaisante aux exigences scientifiques et éducatives d'aujourd'hui. Dans le secteur scientifique,

4. The E.S.C. Agrees that the encouragement of youth and amateurs in entomology is important. We have supported activities of the regional societies in this area. I believe that these local initiatives are essential to the success of programmes in this area and that the E.S.C. should not attempt direct action. However, we welcome suggestions on ways in which we can more effectively support regional efforts.

Entomology in Canada is not adequately responding to the scientific and educational demands of our time. In the scientific area, we are not paying sufficient attention to determining the taxonomic, physiological, genetic, biochemical, and ecological characteristics of the insect fauna of Canada. Entomologists in a cold temperate climate should be experts on characteristics that enable insects to succeed in these climates. Nevertheless, there are very few of our species for which we have adequate knowledge. Surely the efforts to learn more and more about processes in laboratory species of tropical or semi-tropical origin should be balanced by original work on species that have evolved under more stressful conditions. Similarly, how can we develop imaginative approaches to the control of pest species when a large proportion of our entomologists devote themselves to exotic species. We are being deprived of the stimulating interaction that can occur between experts on species in nature and experts on the processes that characterize these species. Perhaps our northern species are less popular because they are more difficult to rear but by failing to rear them we eliminate from our research a group of insects that have short summers. They may also have unique ways of handling other biochemical or physiological processes. Are we meeting this challenge? The main symposium of this annual meeting focuses our attention on one major problem faced by Canadian insects, overwintering. I hope, in the future, to see emphasis placed on other peculiar problems of north temperate insects, e.g. adaptations to extreme variations in day-length and temperature; host finding by phytophages, parasites and predators in temporary habitats (seasonal or annual changes); invasions by species incapable of overwintering; adaptations to short and variable growing seasons.

It is also legitimate to ask whether or not we are providing students with an adequate background of knowledge of insect structure, function, behaviour, quantitative ecology, toxicology and insect control. Unfortunately few of our universities are giving well-balanced instruction. One respondent stated that the possibilities of getting a good training in entomology in the Maritimes are rather limited. This should be a matter of concern to professional entomologists. Perhaps, on the invitation of a regional Society, the E.S.C. could assist in influencing university policy. The E.S.C. could also evaluate the entomology curricula of Canadian universities and thus assist students in making a good choice.

Many respondents lamented the lack of emphasis in curricula and in the E.S.C. on applied entomology. This is unfortunate because I anticipate a considerable number of opportunities for employment in applied entomology within the next 5 years. The successful candidates will be mainly those with a sound background in insect biology, laboratory and field experimentation, quantitative ecology (including computer use) and bases of insect control. A graduate who has been exposed only to pushing back the frontiers of our knowledge of cockroaches or silkworms will be at a disadvantage in this competition.

How can our universities, with their small faculties, meet the challenge of producing well-rounded graduates? I believe that the problem can be partially solved by much closer working relationships between the entomology departments and non-university entomologists. I know several instances where excellent cooperation both in student instruction and in research exist between these groups. The university gains by the addition of entomological skills that would otherwise be unavailable; the research organizations gain by broadening contacts and by working with students. There are, unfortunately, other situations where an impenetrable curtain of frass seems to separate the groups.

In closing, I would like to express the gratitude I feel at having been given the opportunity to serve as President of E.S.C. This Society was formed following a meeting held in Winnipeg in the summer of 1950. It is therefore rather satisfying that the first president from Manitoba should preside at the close of our third decade. After this long wait, I also think we will start the next decade in a highly satisfactory manner with Dr. Loschiavo.

nous n'accordons pas suffisamment d'attention aux aspects taxonomique, physiologique, génétique, biochimique et écologique des insectes du Canada. Considérant nos conditions climatiques par exemple, nous devrions être des experts des mécanismes impliqués dans les processus de la résistance au froid des insectes, alors que notre connaissance actuelle ne se limite qu'à quelques espèces. Sans doute, tous les efforts qui sont mis dans l'amélioration des connaissances concernant les insectes d'origine semi-tropicale et tropicale devraient être balancés par des travaux portant sur des insectes vivant sous des conditions environnementales plus difficiles. Suivant la même idée, je me demande comment il est possible de développer des méthodes de contrôle pour combattre nos espèces nuisibles alors qu'un bon nombre de nos entomologistes se consacrent à l'étude d'espèces exotiques.

Peut-être que les espèces nordiques intéressent moins les entomologistes parce qu'elles soulèvent trop de difficultés d'élevage; cependant en évitant ce genre de problème nous éliminons de notre champ de recherche tout un groupe d'insectes qui ont réussi à développer des mécanismes physiologique leur permettant de survivre à de courts étés et de longs hivers. Il est possible qu'ils aient aussi d'autres adaptations uniques tant biochimiques que physiologiques. Pouvons-nous rencontrer ce genre de défi? Au cours de ce congrès annuel, nous aurons l'occasion de discuter d'un des problèmes majeurs qui caractérisent nos insectes canadiens soit la survie hivernale. J'espère que dans l'avenir nous porterons encore plus d'attention aux problèmes particuliers des insectes des régions tempérées, comme par exemple, les adaptations aux variations extrêmes de température et de photopériode; la recherche de l'hôte par des phytophages, prédateurs et parasites vivant dans des habitats temporaires (changements saisonniers et annuels); l'invasion part des espèces non adaptées à la survie hivernale; les adaptations aux saisons courtes et irrégulières.

Il est également approprié de se demander si nous fournissons à nos étudiants toutes les connaissances adéquates concernant les aspects morphologique, physiologique et comportemental des insectes de même que ceux touchant l'écologie, la toxicologie et le contrôle. Malheureusement peu de nos universités offrent un vaste éventail de cours. Un des répondants au questionnaire faisait remarquer la difficulté d'obtenir, dans les Provinces Maritimes, une bonne formation en entomologie. Les entomologistes professionnels devraient s'en préoccuper. Sans doute, la S.E.C. pourrait offrir un appui aux Sociétés régionales en participant à l'élaboration des politiques universitaires. Egalement, la S.E.C. en évaluant les programmes d'entomologie dans les différentes universités canadiennes, pourrait guider plus judicieusement les étudiants dans leur choix.

Plusieurs répondants ont également déploré le manque d'intérêt pour l'entomologie appliquée tant dans les programmes éducatifs qu'au sein de la S.E.C. C'est une situation d'autant plus déplorable que dans les cinq prochaines années nous prévoyons plusieurs possibilités d'emploi dans le domaine de l'entomologie appliquée. Les meilleurs candidats seront évidemment ceux qui auront une solide formation dans les domaines de la biologie des insectes, de l'expérimentation (en labo et sur le terrain), de l'écologie quantitative (incluant l'utilisation des ordinateurs) et enfin des bases concernant le contrôle des insectes. Un étudiant gradué qui au cours de ses études ne s'est intéressé qu'à la connaissance des blattes et des vers à soie sera désavantagé dans ce genre de compétition.

Comment nos universités avec leurs facultés nécessairement limitées, peuvent-elles parvenir à former des étudiants bien préparés? Je crois que le problème peut être en partie résolu en encourageant la collaboration entre les départements d'entomologie et les entomologistes non-universitaires. Je connais plusieurs cas où il existe une excellente co-opération entre ces groupes. Ainsi les universités bénéficieraient d'une plus grande compétence entomologique qui ne serait pas autrement disponible et les autres organismes par la même occasion en profiteraient en élargissant leurs contacts en travaillant avec les étudiants. Il faut avouer, malheureusement qu'il existe des cas où un rideau de "frass" impénétrable sépare les deux groupes.

En terminant, j'aimerais exprimer la gratitude que je ressens d'avoir eu l'opportunité de servir la S.E.C. à titre de Président. Cette Société a été fondée en 1950 à la suite d'une rencontre tenue à Winnipeg. Il est donc d'autant plus satisfaisant pour moi, en tant que premier Président en provenance du Manitoba, de présider à cette fin de notre troisième décennie d'existence. Et après une si longue attente, je crois que nous attaquerons dignement la prochaine décennie, avec la présidence du Dr. Loschiavo.

The continuing operation of the E.S.C. depends on the efforts and support of the many people - all committee members, committee chairmen, Governing Board members, the Executive, editors, treasurer and secretary deserve the wholehearted thanks of the E.S.C. On your behalf and my own, I honour them. Thank you.

S.R. Loschiavo receives the gavel from W.J. Turnock on becoming ESC President at the Annual Meeting in Quebec City.



CANACOLL FOUNDATION

The CanaColl Foundation is an independent, non-profit organization devoted solely to promoting research on the Canadian National Collection of insects and related arthropods. To date, this support has been used to bring specialists to Ottawa to curate sections of the CNC where the resident staff of the Biosystematics Research Institute lack the expertise.

During the past seven years, CanaColl has supported 22 research grants totaling \$5,266 and representing 40.5 person/week of work. The visiting scientists have improved areas of the CNC so that now the collection is much more useful to the BRI staff, as well as to others. It is obvious that CanaColl is getting excellent value for the money. Because of limited funds, only out-of-pocket expenses can be paid; these funds have been stretched because most of the scientists have been housed by BRI staff.

The 22 visiting scientists were from the United States (13), Canada (4), England (1), Finland (1), Israel (1), Sweden (1), and Switzerland (1). They curated parts of the Acarina (4), Coleoptera (9), Diptera (2), Hemiptera (1), Hymenoptera (4), Lepidoptera (1), and Opiliones (1).

The CanaColl Endowment Fund has grown to over \$16,700 and the annual accrued interest is now over \$1,850. This is enough to support several grants. As the fund grows, and this is where you can help, CanaColl can support more research on the CNC. The small operating expenses are taken from the members' dues, thus 100% of all donations go to the endowment fund and the accrued interest is used only for research grants.

Your support is welcomed. Donations to the endowment fund are tax deductible. For more information, write to: CanaColl Foundation, K. W. Neatby Bldg. Rm. 4058, 1010 Carling Avenue, Ottawa, Ontario K1A 0C6.

INSECT COMMON NAMES AND CULTURES COMMITTEE

The following common name has been approved according to the By-Laws of the committee:

"Strawberry Cutworm" - Amphipoea interoceanica (Smith)

The name will appear in the list of English Common Names now being prepared.

La réalisation des activités de la S.E.C. dépend de l'appui et des efforts de plusieurs personnes. Ainsi tous les membres des comités, les présidents des comités, les membres du bureau de direction, l'exécutif, les éditeurs, le trésorier et le secrétaire méritent tous les plus sincères remerciements de la part de la S.E.C. Je leur rend hommage de votre part et de la mienne.

Merci.

NOMINATIONS FOR ELECTION 1981

The Nominating Committee (W.J. Turnock, Chairman) will prepare a slate of nominations for Second Vice-President, two Directors-at-Large, and two members of the Fellowship Committee.

Nominations from the membership may be submitted in writing over the signatures of at least three active members of the Society, with a signed statement from the nominee indicating his willingness to accept office if elected. Such nominations shall be submitted to the Secretary, Dr. J.E. Laing, Department of Environmental Biology, University of Guelph, Guelph, Ontario, N1G 2W1, not later than 31 March, 1981.

GIFT SUBSCRIPTIONS OF THE CANADIAN ENTOMOLOGIST

For several years, the Society has quietly had a program whereby Members (presently 15) donate their copies of the CANADIAN ENTOMOLOGIST to less fortunate libraries or individuals, usually in underdeveloped countries.

Would YOU like to participate? It is really very simple, just pay your annual membership dues and the Society will take care of everything else. You retain your membership rights and will receive the BULLETIN. You can even suggest where you would like your subscription to go. Normally, however, we like to have a pool of donors and a similar pool of recipients without necessarily identifying one with the other. Each year the recipients receive a letter from the Society noting that they are receiving the CANADIAN ENTOMOLOGIST through the generosity of a member and that if the member resigns from the Society then the recipient will no longer receive the CANADIAN ENTOMOLOGIST (unless we find another donor). Thus, annually the recipient is reminded that he is receiving the journal free and that it is not a permanent arrangement.

If you want to participate by donating your copy of the CANADIAN ENTOMOLOGIST, please let the treasurer know. Remember, you still retain all privileges of membership and you will still receive the BULLETIN.

CANADA BITING FLY CENTRE

The Canadian Biting Fly Centre has recently published a short, coloured, illustrated brochure describing, in English and French, its rationale and function and providing an illustrated list of its Advisory Committee. For copies or further information, write: Dr. M.M. Chance, Managing Director, Canada Biting Fly Centre, University of Manitoba, Winnipeg, Manitoba R3T 2N2 (or phone (204)474-9440).

CANADIAN ENTOMOLOGISTS VISIT JAPAN

XVI International Congress of Entomology, Kyoto, Japan, August 3-9, 1980

Total number of registered participants = 1976

Total number of registered Canadian participants = 53 or 2.68%

per S.B. McIver

GOLD MEDAL ADDRESS

SILK PURSES AND SOWS' EARS: LEARNERS AND LEARNED

by George E. Ball

Quebec City, 6 October 1980

Mr. President, Ladies and Gentlemen: An occasion such as this seems appropriate for some inspection, introspection, and retrospection. So, I will take this opportunity to address four topics from such points of view: first, graduate students and the nature of graduate work; second, lineages of scholars, and in particular the lineage to which I belong; third, entomology in general, and systematic entomology in particular; and fourth, I will talk about some trends and events affecting systematic entomology -- some bad, some good.

I regret that I cannot offer some of my remarks in French, for we are in Québec, and these meetings are being hosted by the Société Entomologie de Québec. To attempt to do so would only confuse my bilingual and francophone colleagues, and would embarrass the members of the Awards Committee. However, I shall use the device that has made English loved and understood the world over: I shall speak loudly and distinctly.

In the citation announcing this year's award of the Gold Medal, those who have taken their degrees with me, and whom I presumably taught, were alluded to. They are a fine group of able and effective entomologists, but I do not believe I taught them anything out of proportion to what I learned from them. By example, I showed them much of what I had learned from others. Each came to my Department as a graduate student with enthusiasm for study of systematic entomology. Each believed that systematic work is exciting and challenging -- that revision of a taxon is a great adventure. I simply encouraged this belief, and beyond that, I examined their ideas and their work, and made suggestions. Silk purses were not made from sows' ears; rather, young men of high caliber were given the opportunity to learn in the way that they chose. They found their challenges in the work of those who preceded them, and the immediate goal of each was to produce still better research. They learned as much from other graduate students -- both from those who preceded them and their contemporaries -- as they did from their professors. Of course, this is the general pattern of education at the graduate level -- intensely interested young people learning from one another, with general guidance from more senior people of similar interests. We need "critical masses" of such people, if science is to continue to flourish in Canada.

Part of the opportunity to learn is an environment conducive to the pursuit of knowledge. Part of this environment is provided for our students by members of our Department, along with like-minded individuals in other Departments of the University of Alberta, and in other institutions elsewhere in Canada, in North America, and in the rest of the world, too. Those who have worked with me have been profoundly influenced by distinguished colleagues from other institutions. This part of the learning environment involves interest by older learners (or the learned) in younger learners (or students) and personal dedication to learning. A second part of the learning environment is the physical facilities: paramount among these, for our students, is the fine biological library that was developed over the years with cooperation and effort of the University Libraries staff. A third part of the learning environment is financial, and here I must refer to not only my University, with its provision of assistantships, scholarships, and fellowships, but also to the National Research Council (more recently, the Natural Science and Engineering Research Council), whose grants made possible much of the field and museum work that formed the basis for the systematic studies that these students undertook. These are some components of what I conceive of as a "web of learning and learners".

Though we may live as parts of a temporally limited web, we derive inspiration and knowledge from past scholars. Although the unborn cannot choose their parents and thus the lineages of which they are ultimately members, scholars can and do choose the intellectual lineages to which they belong.

Intellectual lineages are highly complex, for an individual's ideas are not received from a single source. Nonetheless as the late Brian Hocking suggested, when, seven years ago, he addressed this Society for the last time, such lineages can be defined in terms of professor-graduate student linkages -- and to good advantage for tracing influence of scholars and their ideas. Those who worked with me are part of an intellectual lineage that extends back to the great American entomologist, John Henry Comstock, and beyond him to the Swiss entomologist Herman Hagen. I did not know Professor Comstock, but I studied at Cornell University with professors who knew him, or who took their degrees with him, or who took their degrees with one of his students. Comstock founded the Department in which I was privileged to undertake graduate work. So, I am a part of the Comstock lineage.

Professor Comstock was what Carl Lindroth, in a remarkable essay on the history of systematic entomology, referred to as a "Polyhistor": he was expert in many fields of entomology. His principal contribution to systematic work was his search for a phylogenetic system of the orders, as reflected in variation in wing venation. Courses in systematics at Cornell centered around phylogenetic analysis, and the learned, remarkable people with whom I worked there encouraged my interest in such matters. So, my approach to the study of systematics was established, and is a reflection of Comstock's approach. Years ago, Professor J.G. Needham wrote a paper about Comstock entitled: "The Lengthening Shadow of a Man". But the analogy seems inappropriate. It is not a shadow that Comstock cast, but rather a light that he shone, and those of us stimulated by it extend its rays further.

I will not risk naming the many Cornellians, at the time both graduate students and faculty members, who aided me, for I fear overlooking and therefore slighting someone. I am sure though, that my friends from those days of 30 or so years ago will not take offense if I mention one of their number who was one of my sponsors, and was very good to me, and who just might be forgotten because of a series of unfortunate events -- the late Dr. Vernon Sennock L.L. Pate.

I also want to mention one work that showed me what writing about systematics ought to be: it is "The Geographical Distribution of the Butterflies of the West Indies", a thesis by one Eugene G. Monroe, who recently retired from the Biosystematics Research Institute. This thesis is scholarship at its best: breathtaking in scope, painstaking in detail, and written with style. Dr. Monroe will probably demur with my judgment. In any event, I am deeply grateful for what I received while a younger learner and among the learned at Cornell University.

I mentioned that systematics is a great adventure. One begins with a batch of bugs representing species thought to be related at some level. Months later, after following numerous false trails through a mental Minosian labyrinth, the path is found that leads to a satisfying reconstructed phylogeny of the insect group in question. This is the beginning of understanding, and those who have taken a systematic problem to this stage find the mental vista intensely rewarding -- as rewarding, I daresay, as the view of the Pacific Ocean that greeted Balboa after his harrowing journey across the Isthmus of Panamá.

In other ways, too, systematics is adventurous. Most of the text of this presentation was written by rather dim light, late at night, in a camper parked on the backroads of Durango and Chihuahua, during a field trip. Field work brings with it all the excitement of the hunt: life under fairly primitive (sometimes perilous) conditions, good and bad weather, good and bad health, and many frustrating searches both for localities and specimens, and punctuated by a few delightful and striking finds. As even Charles Darwin wrote to a friend: "*When I hear of the capture of rare beetles, it is like the sound of a trumpet to an old war horse...*". Obviously, collecting was a great adventure to him, too. Then, there are the other hunters, with whom one shares the trials and tribulations, as well as the delights and satisfaction of life in the field. I suspect that a modern day entomological field party is only superficially different from a group of Stone Age mastodon hunters.

Now, I wish to consider various forces at work that are affecting learning about systematic entomology. My first concern is about the general perception of entomology: to many, it is a field of applied science: as such, it is conceptually divorced from basic biology. However, entomology is a part of zoology; it is a special branch, whose goal is to understand insects. This goal has nothing to do with eradication or artificial regulation of pest populations. From our understanding of insects as living organisms, by-products emerge: one of these is ability to regulate numbers of certain pest species. But, I insist that the drive for understanding is the core of the field, and, as a learner, I pursue aspects of this basic

understanding, generally in the area of systematics, and specifically in classification of carabid beetles. I apologize to no one for having chosen to work in such a seemingly esoteric area, nor do I apologize for offering encouragement to others who would labor in similar vineyards. There simply has to be room in the system for persons for our bent, because our contributions are needed both by those who would understand our universe and by those who wish to apply knowledge to improvement of the lot of mankind. It seems then, that applied entomologists would be well advised to ensure that the unapplied aspects of the field receive due consideration, and not just crumbs that fall from the high table where feast those whose fields of endeavor make them, in the eyes of the public, obvious benefactors of society.

In making these remarks, I am not unmindful of the excellent support that this Society, most of whose members are economic entomologists, has given to development of the Biological Survey of the Insects of Canada, an endeavor specifically designed to increase our understanding of the insects whose country we inhabit. I simply want to stress the desperate need for such support, especially in this time dominated by anti-intellectualism and xenophobia, and by inconsequential political leaders misguided by middle and high-ranking civil servants who are living embodiments of the "Peter Principle". Why is it, one may ask, that entomologists in the Federal Service are so restricted in their ability to attend scientific meetings? Obviously, the value of a gathering such as this one, is not appreciated by persons in controlling positions who ought to know better. I regard such restrictions as anti-intellectual for they inhibit the free exchange of scientific information, both directly and indirectly. Such inhibitions are breaks in the web of learning.

Anti-intellectualism and xenophobia are having an effect on systematic work. For a field to flourish, its practitioners require freedom to do what they think is necessary. If they are unduly restricted, their endeavors will come to naught, or will be undesirably shaped. Other things being equal, systematists require freedom to collect specimens of the groups they are studying wherever such taxa occur in the world. Recently, various governments have developed restrictions of one kind or another -- admittedly to curb abuses (real or imagined) to the biota -- but restrictions that nonetheless inhibit free exchange of scientific material among qualified individuals. Regulations make it difficult for qualified foreign biologists to obtain permission to conduct studies outside their own countries. Thus, we are treated to the spectacle of destruction of Brazilian rain forests with its tremendously important biota, while at the same time foreign biologists are discouraged by government regulations from going to collect material that represents species soon to become extinct. Even native professional collectors are being put out of business, presumably to ensure that all the fauna stays "at home", in its death trap.

I understand that Galapageian orchardists are free to shoot any Darwin's finch on sight, in defense of their fruit crops, but that it is virtually impossible for qualified biologists to obtain permits to collect study material. Mexico is most attentive in protecting its non-human vertebrates against foreign collectors, while, at the same time, little seems to be done to protect native forests against depredations of Mexican woodcutters; and, as the forest go, so goes the biota, including both vertebrates and invertebrates. Australia forbids export of biological material, except to those who have signed the "holotype pledge".

If each of these countries were pursuing zealously the study of its biota by development of major museums and programs in universities to train additional taxonomists, the restrictions might make some sense. In fact, this is not happening, though Australia has a group of insect taxonomists at CSIRO who are doing superb work. So, the biotas of these countries, though well protected against foreigners, are either not receiving the protection required to preserve them, or are not being adequately studied.

I am pleased to note that Canada has not saddled itself with such counter-productive regulations directed principally against foreign biologists. It is just as well, for Canadian taxonomists have their own special problems with regulations inflicted by Parks Canada and certain provincial governments. These regulations reflect either a lack of interest in advancement of knowledge, or the ludicrous "let it be" attitude of well-intentioned but woefully and perhaps willfully ignorant conservationists.

Our Society should certainly advise strongly against establishment of any regulations directed specifically against foreign insect taxonomists, and should encourage the Provincial and National Parks services to establish less restrictive policies with regard to collecting insects.

If there are forces at work that cause pessimism, there are also happenings, that provide the basis for an optimistic outlook. One of these is international, and concerns the general cooperativeness of curators of major national collections (and of other institutions as well) with working systematists who require access to materials housed in such collections. When I began working some 30 years ago, it was virtually impossible to borrow types, and difficult to obtain loan of non-type material from institutions. This has changed, and now a reputable worker can obtain virtually what is required in the way of preserved material, from anywhere in the world. Thus, revisions of taxa on a world-wide basis are made possible, and in turn this makes possible establishing much sounder taxonomic conclusions than are possible on regionally based work. Learning is thus made easier. This spirit of cooperation among working systematists is the very antithesis of the anti-intellectual xenophobia alluded to previously. Hopefully, cooperative attitudes will prevail, for they strengthen the web of learning.

The second item that gives cause for optimism and also great pride in this Society is its efforts in establishing the Biological Survey of the Insects of Canada. The work already done (in which I played a minor part) makes easier learning about the Canadian fauna in a general way, and provides an outstandingly fine base for future work. Hugh Danks, the Director of the Survey, has been recognized for his enormous contribution to the success of the initial stages of its development, and so has Antony Downes, whose branch led the Survey is. I hope the Society will continue to support the activities of the Survey, both morally and in more tangible ways.

The third item that gives me cause for optimism and also makes me proud to be a Canadian taxonomist, is the Handbook series that was started by colleagues in the Biosystematics Research Institute of Agriculture Canada. This superb series will make it possible for amateurs and professionals alike to learn about and achieve understanding of our fauna. It also makes possible closer cooperation among entomologists of various institutions, in advancing knowledge of the fauna. This cooperation is part of the web of learning. This series of publications simply has to be extended to cover all arthropod taxa known from Canada (and hopefully, Alaska) -- though many years will be required to achieve this goal.

So, although there are forces which are inhibiting extension of our culture through understanding of insects, such forces are being countered indirectly within the scientific community. Thanks to efforts by Canadians, the basis for a rapid increase in knowledge of the insect fauna has been laid. To exploit fully this base, we need to have positions for able young people who wish to take part as learners in the great adventure of systematic biology.

What I have attempted to show is that, as an individual scientist, I am part of a web of present-day learners which has supporting strands extending from the past forward. In turn, from the present-day web, there are strands extending toward the future which I have helped to build. These strands are the next generation of systematic entomologists.

One might be tempted to be overawed by one's importance in this rather complex nexus of persons and processes. However, such thoughts that I might have are tempered by memory of an event of some years ago, when, at the request of our graduate students, the faculty members of our Department explained in a series of brief talks just what we were doing. I ventured to suggest, in my presentation, that my work could be viewed as "footprints in the sands of time", and going on further with Longfellow's poem: "footprints that perhaps another, travelling o'er life's storm-tossed main, some forlorn and shipwrecked brother, seeing, may take heart again". When Brian Hocking came to speak, he told us about the work that he proposed to do on his forthcoming sabbatical leave. His studies would involve flight of islandic insects in relation to on-shore and off-shore winds. He concluded with the remark that he did not know about "footprints in the sands of time", but that he certainly intended to leave some in the sands of Tahiti! The moral I draw from this is that as scientists, we must not take ourselves too seriously. On the other hand, our science demands and deserves our full attention and dedication.

Thank you for letting me share these thoughts with you. Thank you for honoring me as you have today. I think the award is unwarranted, but I appreciate it deeply, and it will inspire me to attempt to earn it by future work.

GEORGE E. BALL

recipient of the 1980 ESC

Gold Medal for Outstanding Achievement
in Canadian Entomology



The 1980 recipient of the Gold Medal for outstanding achievement in Canadian entomology is Dr. George Eugene Ball, Department of Entomology, University of Alberta.

Dr. Ball was born in Detroit, Michigan, and received his elementary and secondary education in that city. He entered Cornell University as an

undergraduate in 1943, but in 1944 left for a two-year period of active service in the United States Marine Corps. He then resumed his education and received an A.B. degree from Cornell University in 1949, and M.S. in Biology from the University of Alabama in 1950, and a Ph.D. in Entomology from Cornell in 1954. In the same year, he joined the Department of Entomology, University of Alberta, as an assistant professor. In 1958 he became an associate professor, in 1965 a full professor and in 1974, Chairman of the Department.

Dr. Ball has earned an international reputation for his research on the systematics, phylogeny and zoogeography of North and Middle American Carabidae. In 1956, he published a revision of the North American species of the genus *Heilomorphoides* Ball, and in 1969 an extensive taxonomic study of the North American Licinini with notes on the Old World species of the genus *Diplocheila* Brulle (Coleoptera). In 1960, he made a significant contribution to our knowledge of the Carabidae published in Arnett: *The Beetles of the United States*. A year later, as editor he published with J.B. Wallis an excellent treatise, *The Cicindelidae of Canada*. In 1966 there appeared a revision of the North American species of the subgenus *Cryobius* Choudoir. He was co-author and editor of *The Kodiak Island Refugium* 1969. In 1972 he co-authored a work on the taxonomy of the Nearctic species of the genus *Calathus* Bonelli. Dr. Ball has reviewed several books on the common insects of North America and on Carabidae. These are but a few examples of his contributions to our knowledge of carabid beetles. His more than fifty publications are notable for their breadth, clarity and depth of analysis and for their significance to phylogenetic and biogeographic theory. Many of his contributions are book length treatises. He is one of the first and most active students of Cladistic analysis in North America and has built the systematic section of the Department of Entomology, University of Alberta into a centre for this kind of research.

Because of the high quality of his work, 21 students of superior calibre and from several nations have elected to do systematic theses under his direction. The contributions of these students have consistently achieved the high standards set by Dr. Ball, and some of these people now occupy important positions on the staffs of the Biosystematics Research Institute, the British Museum, the United States National Museum, the California Academy of Sciences and those of several Universities.

During his 24 years at the University of Alberta and his six as Chairman of Entomology, Dr. Ball has fostered an atmosphere of free enquiry that has favorably affected all department members regardless of their specialty. His opinion on educational matters is valued throughout the University and his services as a member of student committees in all biologically-oriented departments are in great demand.

As part of his administrative responsibility as Chairman of the Department of Entomology, Dr. Ball is curator of the Strickland Museum and a member of the Chairmen's Committee, Faculty of Agriculture and Forestry.

Dr. Ball is a member of fifteen entomological or biological societies in Canada, U.S.A., Mexico and Europe. He was president of the Entomological Society of Alberta in 1957-58 and of the Coleopterist's Society in 1972-73. He has served on the Scholarship Committee, the Common Names Committee, and as a Director-at-Large of the Entomological Society of Canada. He is a Fellow of this Society and of the Biological Research Institute of America. Dr. Ball has served as a member or chairman on various committees including the Associate Committee on Quaternary Research, National Research Council (1973-76); Advisory Committee and Scientific

Committee, Biological Survey of Insects of Canada; Historical Committee and Insect Survey Committee, Entomological Society of Alberta.

Dr. Ball has served on the Board of Directors, North American Beetle Fauna Project, on the Editorial Board for Miscellaneous Publications of the Entomological Society of America, and as a referee for the National Science Foundation. In addition, he has been convener of special discussion groups at national international meetings.

Dr. Ball has received grants from National Research Council, University of Alberta, American Philosophical Society, Arctic Institute of North America, Boreal Institute for Northern Studies, National Science Foundation and Natural Sciences and Engineering Research Council.

The entomological journal, *Quaestiones Entomologicae*, founded by the late Brian Hocking and now in its sixteenth volume has, under Dr. Ball's editorship, become an important organ for the publication of monographic works on insect systematics and morphologic works on insects systematics and morphology.

He is currently co-editor with T.L. Erwin and D.R. Whitehead 1979 of a series entitled *Carabid beetles: their evolution, natural history, and classification* (Dr. W. Junk b.v., Publisher, The Hague. 635 pp.)

In recognition of his outstanding accomplishments in research and education, the Entomological Society of Canada is pleased to award the 1980 Gold Medal to Dr. Ball.

G.E. Ball receives the Society's Gold Medal for 1980 from President W.J. Turnook.



PERSONALIA

Professor John M. Webster has been appointed as the new Associate Academic Vice-President at Simon Fraser University. Dr. Webster received his university training at Imperial College, University of London, specializing in parasitology and nematology. His career started as a Research Officer at Rothamsted Experimental Station, England. After a year at the Agriculture Canada Research Laboratory for Biological Control at Belleville, Ontario, he joined the Department of Biological Sciences, Simon Fraser University, becoming Departmental Chairman in 1974 and Dean of the Faculty of Science in 1976. His research publications (over 80) are mainly on nematodes, especially host parasite relationships of plant and insect parasites. We are happy to congratulate, a member of the ESC, and wish him all success with his new challenges.



HUGH V. DANKS

recipient of the 1980 C. Gordon Hewitt Award for Outstanding Achievement in Canadian Entomology

The 1980 recipient of the C. Gordon Hewitt Award for outstanding achievement in Canadian Entomology by an individual less than 40 years old is Dr. Hugh Victor Danks, Biological Survey of Canada, National Museum of Natural Sciences, Ottawa.

Early in his career Dr. Danks has achievements in two areas of entomological activity. First, as an insect ecologist he has made perceptive studies on the life cycle in various species, especially as it is related to boreal and winter environments. Secondly, as Entomologist-in-Charge of the Society's Biological Survey

Project, he led in producing a unique amount of the insect fauna of Canada and established directions for its study in the future.

Dr. Danks was born at Farnham, England, in 1943, and studied at the Imperial College, University of London. He was awarded the degree of B.Sc. (Honours) in 1965, followed by the Ph.D. in 1968. His Ph.D. thesis concerned the habits, life cycles, and populations of sphecoid wasps that nested in the stems of Rubus. The work was published in the *Transactions* of the Royal Entomological Society of London and the *Journal of Animal Ecology*. He was editor of the *Bulletin of the Amateur Entomological Society* in 1963-68.

In 1968 he was awarded an N.R.C. postdoctorate fellowship to work at the Entomology Research Institute, Ottawa, and held this for 2 successive years. Within the general field of the biology of overwintering, he chose the Chironomidae and became engaged in various field and review studies including classical aspects of cold hardiness and supercooling. These studies broke new ground in emphasizing the behaviour and ecology that adapted the insect for winter survival, and in stressing the microhabitat conditions encountered by the insect in winter. In the summer of 1980 he was studying insect life and adaptations under the extreme conditions of the arctic; the list of insects published by Danks and Byers showed that Bathurst Island was second only to Isachsen as a harsh and impoverished high arctic environment. This arctic experience led to fruitful collaboration with D.R. Oliver and P.S. Corbet. Working with seasonal material of chironomids and mosquitoes collected some years previously at Lake Hazen (lat. 81°N) they classified the life cycle phenology, and behaviour of these groups under arctic conditions. This work demonstrated a precise complex adaptation among arctic insects to the seasonal cycle, and a lesser scope for 'opportunistic' indeterminacy than had previously been supposed.

In 1972 Dr. Danks was appointed Research Associate at North Carolina State University, to investigate ecological aspects of the control of crop pests. His studies showed that intricate and subtle interplay of life-cycle and environmental factors determined the success of the tachinid parasite, Winthemia rufopicta, in controlling Heliothis virescens under field conditions. In other studies with Rabb and Southern, he reviewed the whole spectrum of hymenopterous and tachinid parasites of Heliothis in the southern states and their potential as controlling factors.

Dr. Danks returned to Canada in 1974 as Assistant Professor in the Biology Department at Brock University. In addition to being a stimulating teacher, he was active in faculty affairs and served on numerous committees, including the Dean's Biology Planning Committee and the Committee on Renewals, Promotion and Tenure. He resumed his work on chironomids, and embarked upon an ambitious review of the modes of seasonal adaptation in insects. The first part was published in 1978 and others are in preparation.

In 1977, Dr. Danks was appointed Entomologist-in-Charge of the Secretariat for the Pilot Study for a Biological Survey of the Insects of Canada sponsored by the Entomological Society of Canada. Dr. Danks has made an outstanding success of his responsibilities in the Biological Survey Project. His wide grasp of the present position and future needs of systematic and faunistic entomology, together with his industry and effectiveness in organization and planning have been the primary ingredients. The Secretariat has produced two major documents, the *Final Report of the Pilot Study* (June 1978, xv + 210 pp.) and the multi-author volume *Canada and its Insect Fauna* (Mem. ent. Soc. Can., 108 (1979 579 pp.)). The *Final Report*

is a fully and precisely documented account of the present position of systematic and faunistic entomology in Canada. *Canada and its Insect Fauna* is an expert review of the present state of knowledge of the Canadian fauna of insects and related arthropods and represents a unique achievement in the history of Canadian entomology. The concept, planning and editing of this work is Hugh Danks' achievement, virtually singlehanded, as also is the successful recruiting and coordination of the 60 contributing authors. Hugh is the author of 5 of the general or ecological chapters, and a co-author of the systematic account of the Hymenoptera. His interesting and original chapters on *Terrestrial Habitats* and on *Characteristic Modes of Adaptation* in the Canadian fauna call for special mention.

The *Pilot Study* yielded also, through Hugh's energy and effectiveness, the *Annotated List of Workers on Systematics and Faunistics of Canadian Insects* (1977, 107 pp.) and quarterly reports on news and progress, published in the Society's *Bulletin*. But equally important is the fact that it has established within the Society an effective mechanism for discussion and stimulation of all aspects of systematic and faunistic entomology in its Canadian setting. When the *Pilot Study* was completed, the Society obtained a smaller contract with the National Museum of Natural Sciences for a study related to their field station on Bathurst. This was made possible by Dr. Danks' earlier experience there, and enabled him to write the manuscript *Arthropods of Bathurst Island, N.W.T.* which is now in press. Another larger contract for a *Review and Synthesis of Knowledge of Northern and Arctic Insects* will also be under his authorship.

Dr. Danks is the author or co-author of 36 scientific papers and he has held five scholarships or grants. He is a member of the Entomological Society of Canada and the Royal Entomological Society of London. In recognition of Dr. Danks' outstanding achievements in Canadian entomology, the Entomological Society is pleased to present him with the C. Gordon Hewitt Award for 1980.



H.V. Danks receives the Society's Hewitt Award for 1980 from President W.J. Turnock.

PERSONALIA

Sam Loschiavo was invited as the Canadian delegate to a "Coloquio Internacional sobre Conservacion de Semillas y Granos Almacenados" held October 20-25 at Oaxtepec, Morelos, Mexico, where he gave a paper on insect-detection methods for application in stored-grain surveys. Scientists from U.K. and U.S.A. also attended, along with those from the National University in Mexico (UNAM) and representatives of various organizations involved with the production and marketing of stored grains and seeds in Mexico.

Curtis Sabrosky officially retired from the Systematic Entomology Laboratory, IIBIII, SEA, USDA, after a productive and distinguished career of 34 years as a research entomologist. Curtis's leadership and interest in the broader aspects of entomology brought him many awards and honors, as well as responsibilities over the years. He served as President of ESA in 1969. A reception in Curtis's honor was held on October 18 in the Botany Seminar Room of the U.S. National Museum of Natural History. We join the many well-wishers in expressing our most sincere congratulations to a long time member of ESC.

If you're thinking about an electron microscope...

send for one – or both –
of these brochures.



TRANSMISSION ELECTRON MICROSCOPE EM 400T

32-page brochure describing the EM 400T's many features including:

- 10-second specimen insertion and viewing
- stable field of view, focus and magnification over a full $\pm 60^\circ$ tilt
- automatic emission control (eliminates filament saturation worries)
- extra-fast low magnification selection
- monoknob focussing
- fully automated photography
- high degree of specimen protection

It's designed specially for addition of X-ray analysis and for STEM whenever required, with no compromises.

- With – a universal twin objective lens assuring attainable line resolution of 0.14 nm (0.4 nm point)
- Plus – a TEM nanoprobe for a 4nm beam spot and very fast micromicro analysis in TEM mode...at the flick of a switch
- Plus – full analytical options – EELS or X-ray analysis
- Plus – STEM for (1) imaging and X-ray microanalysis of bulk and thin specimens, (2) line analysis and analytical mapping of selected elements.



SCANNING ELECTRON MICROSCOPE SEM 505

24-page brochure describing Philips' very latest electron microscope. A few of its many features:

- Extremely easy to use
- Fibre optics cathodoluminescence detector system
- Superb TV rate imaging – can be enhanced by optional LaB6 source
- Data Link gives almost unlimited versatility in use of accessory modules
- High-sensitivity transmission detector with TV rate imaging
- Simultaneous energy-dispersive and wavelength-dispersive analyses.

Drop us a note – Give us a call –
Send us a telex.



PHILIPS ELECTRONICS LTD
Scientific & Industrial Equipment Division
601 Milner Avenue, Scarborough, Ontario M1B 1M8
(416) 292-5161 Telex: 065-25100

• Vancouver • Edmonton • Winnipeg • Ottawa • Montreal • Dartmouth

PHILIPS

ACTIONS OF THE GOVERNING BOARD

October 4-5, 1980

1. *Finance*

- 1) Approved an increase of \$1,000 (to \$2,500) in the annual grant to the Affiliate Societies for the joint annual meeting.
- 2) Requested the Treasurer to detail, each year, the costs of the Society publications.
- 3) Asked the Finance and Publications Committees to look at alternate ways of financing publication of the Memoirs.
- 4) Asked the Finance Committee and the Scientific Committee of the Biological Survey to prepare a detailed budget for the publication of "Arctic Arthropoda".

2. *Public Education*

Announced that the French version of the pamphlet "Careers in Entomology" was available from the Quebec Entomological Society.

3. *Employment*

- 1) Directed the Employment Committee to produce the third annual Resumé booklet of student members of E.S.C. seeking employment.
- 2) Asked the Employment Committee to develop a proposal to assess manpower requirements in Entomology, in Canada, for the next five years, and to submit it to Supply and Service Canada for funding.

4. *Attendance at Scientific Meetings*

Announced that the President was corresponding with the Professional Institute of the Public Service, the Treasury Board, and Officials of Agriculture Canada to encourage them to allow scientists in the Federal Service to attend more scientific meetings.

5. *Science Policy*

- 1) Recommended that the Science Policy-Public Education Committee be divided into two committees.
- 2) Recommended that the Science Policy Committee prepare a position paper on the inputs of entomologists to the area of biotechnology to be submitted to the Task Force on Biotechnology (MOSST).
- 3) Instructed the Science Policy Committee to prepare a brief on "The need for permanent Government-supported research concerned with the role of insects in development of renewable natural resources in Canada".

6. *Grants*

Requested that all grants written on behalf of the Society be submitted to the Governing Board or Executive Council for approval prior to submission for funding.

7. *Bibliography of Arctic Insects*

Requested that Dr. H.V. Danks submit an NSERC application for publication of the Bibliography to the Executive for their approval prior to submission to NSERC.

8. *NSERC Publication Grant*

Announced that a \$25,000 grant had been obtained from NSERC to reduce page charges for *The Canadian Entomologist* for 1980-81, and that a further grant proposal would be submitted for 1981-82.

9. *Photo Salon*

Asked the Executive to set up an Ad Hoc committee to study the relative merits of continuing to sponsor the Photo Salon at the annual meeting.

10. *Joint Meeting - E.S.A., E.S.O., and E.S.C., Toronto 1982*

The President announced that S.B. McIver, S.R. Loschiavo, F.L. McEwen, and J.E. Laing would meet with the Executive of the E.S.A., in Atlanta, during the E.S.A. annual meeting to set up liaison for the joint meeting.

11. *Nominations*

Recommended that the closing date for nominations be moved from March 31 to April 30 and/or the publication of the report of the Nominating Committee be moved forward. These matters were referred to the By-Laws Committee for further study.

12. *Scitec*

Heard from the President of SCITEC that the aims of SCITEC were to act as a spokesman for all of science in Canada to the Government, to act as an instrument for public education on scientific matters, and to act as disseminators of scientific information on a broader scale as a member of an international group of organizations (e.g., A.A.A.S., Intersciencia etc.).

13. *Common Names*

Proposed a budget of \$1,150 for completion of the final copy of the "List of Common Names of Insects of Canada".

14. *Insect Losses*

Recommended that the "Study of the Costs of Destructive Insects in Canada" be sent to Supply and Service Canada for funding.

15. *Biting Fly Centre*

Responded positively to the request from the Biting Fly Centre for an endorsement.

16. *Fellows of E.S.C.*

Agreed with a change in the By-Laws proposed by the By-Laws Committee that a Fellow of the E.S.C. will remain a Fellow regardless of whether or not the Fellow remains a member of E.S.C.

ACTIONS OF THE GOVERNING BOARD

October 8, 1980

1. *Executive Council*

Approved the make-up of the Executive Council as submitted (S.R. Loschiavo, President; G.B. Wiggins, First Vice-President; G.E. Ball, Second Vice-President; W.J. Turnock, Past-President).

2. *Trustees*

Approved the Trustees as submitted (E.C. Becker, Treasurer; J.E. Laing, Secretary; D.C. Eidt, Scientific Editor; C.A. Miller, Assistant Scientific Editor; D.M. Davies, Bulletin Editor).

3. *Committees*

S.R. Loschiavo presented a list of Committee Chairmen and Representatives which appear in the Bulletin.

4. *Secretary*

Announced that the Society will need a new secretary after the 1981 Annual Meeting in Alberta.

5. *Budget*

Approved the budget for 1981 as amended by the Treasurer.

6. *Honoraria*

Adjusted the honorarium to the Bulletin Editor to \$500 per annum and the honoraria to the Treasurer, Secretary, and Scientific Editor to \$800 each per annum.

7. *Mid-Term Governing Board Meeting*

Agreed that the Mid-Term Governing Board Meeting be replaced by an Executive Council Meeting during the 1980-81 year.

8. *Governing Board Meeting*

Announced that the next Governing Board Meeting will be held at the Banff School of Fine Arts, Banff, Alberta, October 4 - 5, 1981.

MINUTES

ANNUAL GENERAL MEETING

Chateau Frontenac
Quebec City, Quebec

October 7, 1980

President Turnock called the meeting to order at 4:30 p.m. There were approximately 60 persons in attendance.

W.G. Friend moved, D.M. Davies seconded that the Agenda be accepted as circulated. Motion carried.

1. *Notice of Meeting*

The notice of this meeting was published in the Bulletin, Vol. 12, March 1980.

2. *Proxies*

There were no proxies received.

3. *Deceased Entomologists*

One minute's silence was observed in memory of: W.J. Boyes, H.E. Gray, W. Hanec, A.M. Heimpel, K.M. Hughes, W.N. Keenan, C. Miller, and P.N. Vroom.

4. *Minutes of the Twenty-Ninth Annual General Meeting (1979)*

The minutes were published in the Bulletin, Vol. 11, December 1979.

G.H. Gerber moved, D.C. Herne seconded that the minutes be accepted as published. Motion carried.

5. *Business Arising from the Minutes*

There was no business arising from the minutes.

6. *Report of the Governing Board*

President Turnock presented a report to the 30th Annual General Meeting. This report will be published in the Bulletin.

6.1 The Secretary read the following notice of a proposed change in the By-Laws.

Article IV - Membership

Special Member

- 5(a) Fellow: A member of the Society (Active Member, Honorary Member, Emeritus Member) who has made a major contribution to entomology may be named a Fellow of the Society. The status of Fellow shall be retained whether or not a Fellow remains a member of the Society.

7. *Auditor's Report*

E.C. Becker moved, D.M. Davies seconded that the Auditor's Report be accepted. Motion carried.

8. *Election Committee Report*

President Turnock asked the Secretary to read the Election Committee Report. The Secretary reported that Dr. G.E. Ball was elected Second Vice-President. Drs. P. Benoit and R.D. McMullen were elected to the Board of Governors as Directors-at-Large, and Drs. W.G. Wellington and R.A. Brust were elected to the Fellowship Selection Committee.

The amendment to the By-Laws, which allows the Assistant Scientific Editor to be named a Trustee of the Society, passed by a large majority.

Motion: Moved by G.B. Wiggins, seconded by D.C. Herne that the Election Report be accepted. Carried.

9. *Installation of New Officers*

President Turnock, at this time, turned the chair over to S.R. Loschiavo as Incoming President of the Society. President Loschiavo thanked Dr. Turnock for his service to the Society and then asked him to escort the Second Vice-President, Dr. G.E. Ball, to the dais.

10. *Service Awards*

S.R. Loschiavo then presented a Service Award to the Outgoing President, Dr. W.J. Turnock.

11. *Election of Auditors*

E.C. Becker moved, B.J. Philogène seconded that the Society retain George Welch and Company as auditors for the year 1980. Motion carried.

Action: Treasurer

12. *Resolutions*

President Loschiavo asked Dr. P.W. Riegert to present the following resolutions on behalf of the Society.

1. Whereas the 30th Annual Meeting of the Entomological Society of Canada, having met jointly with the Entomological Society of Quebec, in Quebec City, has been culturally stimulating, scientifically informative, and socially enjoyable, and

whereas the success of these meetings has, in large measure, been the result of dedicated and unstinting efforts of Dr. J. McNeil (General Chairman), Dr. C. Cloutier (Local Chairman), and their many committees,

be it therefore resolved that the Society express its appreciation to these officers and their committees.

2. Whereas the Quebec Department of Energy and Resources, the French-Canadian Association for the Advancement of Science, the Canada Department of the Environment, the Mathieu Extermination Engineering Co., and Maheu & Maheu Inc., have generously provided financial assistance,

be it resolved that the Entomological Society of Canada express its thanks to these corporate friends for this assistance.

3. Whereas the Université de Laval has generously provided audio-visual and other equipment for interim use by the Society, and

whereas the Rector of the University and the Dean of Science and Engineering have graciously sponsored the reception held on Monday evening, be it resolved that the Society thank them for their contribution to the success of the meetings.

4. Whereas the Division of Crop Protection of the Quebec Department of Agriculture has, through its gift of wines, greatly enhanced the social attributes of the banquet,

be it resolved that the Society endorse a vote of thanks to be given the Division for this contributory gift.

5. Whereas the Chateau Frontenac has provided adequate meeting rooms, guest accommodation, and courteous service for these meetings, in the face of trying travel times,

be it resolved that the Society express its appreciation to the management of the Chateau.

P.W. Riegert moved, B.J. Philogène seconded that these resolutions be accepted. Motion carried.

D.A. Peebles asked about the status of a resolution concerning support for entomological research that was passed at the 1979 Annual General Meeting. Dr. Turnock pointed out that part of the present direction of the Science-Policy Committee would, in part, satisfy the aim of this resolution.

13. *Other Business*

President Loschiavo called for the other business. There was none.

14. *Notice of the Thirty-First Annual Meeting of the E.S.C.*

The meeting will be held in Banff, Alberta on October 6, 7 and 8, 1981.

15. *Adjournment*

G.H. Gerber moved, P.W. Riegert seconded that the meeting be adjourned.

PERSONALIA

Marcel Hudon, Senior Entomologist at St-Jean, attended the XIth work planning 3-day symposium of the International Working Group on *Ostrinia* (IWGO), a cooperative project on the European corn borer, in Vienna at the Federal Institute for Plant Protection (Austria) last September. Marcel spoke on the maize breeding program carried on at St-Jean, the 1980 mass production of 280,000 corn borer egg masses to serve his station, the Canadian - US maize seed production industry and Guelph University. This symposium was the most important since 1969 by the number of countries represented (13) and the participants present. After the symposium, the group made excursions in the neighbourhood of Vienna, visiting different agricultural institutions, commercial maize seed - growing and experimental farms. After the IWGO symposium - excursion, Marcel visited the Research Institute for Plant Protection in Budapest (Hungary) and the Agricultural Research Institute of the Hungarian Academy of Sciences in Martonvasar. In Budapest, Marcel was invited to present an illustrated seminar to the staff of the Institute on 'Breeding maize for resistance to insects - diseases in Canada'. At this seminar, were present representatives of Greece and Poland.

A.W.A. Brown, John Hannah Distinguished Professor Emeritus, Michigan State University and former President and Gold Medalist of ESC presented the Second Memorial Lecture for the April 1980 annual meeting of the American Mosquito Control Association. This lecture was titled "What have insecticides done for us" (Mosq. News 40: 333-338, 1980) honoured the memory of Dr. Maurice W. Provost (1914-1977), former Director of the Florida Medical Entomology Laboratory at Vero Beach, Florida. Dr. Brown's mailing address in 1261 Genolier, Vaud, Switzerland.

CANADIAN ENTOMOLOGIST HONOURED IN INDIA

Dr. Leslie C. Coleman, who was killed in a car accident near Saanichton, B.C., 14 September 1954, was for a quarter of a century, Director of Agriculture for Mysore State, India. After studying at the Universities of Toronto and Göttingen, he joined the Mysore Government Service in 1908 as Mycologist and Entomologist, becoming Director of Agriculture in 1913. He retired from India in 1934 and returned to Canada to become professor of Botany at the University of Toronto. He eventually retired (again) in 1949 to settle in Victoria, B.C. Thereafter, however, he co-operated with the Federal Government of Agriculture, studying problems concerning the nature of plant tumours. He never lost his early interest in entomology. Less than a year before his death, in November, 1953, he made a private return visit to Mysore, where he was treated as a State Guest. His name is still regarded in high esteem there. As long ago as 1910, Ignacio Bolívar y Urrutia, the renowned Spanish entomologist named the injurious "*Deccan grasshopper*", *Colemania sphenarioides* (Pyrgomorphidae), in his honour. Now, 70 years later a new Indian international entomological journal to be called *Colemania* is to be published. It will be launched early in 1981, with its editorial office in Bangalore, where Coleman for so long had his head quarters. The editor, Dr. K.D. Ghorpade (P.O. Box 2564, 123 Brigade Rd., Bangalore — 560 025 India) will be most pleased to receive any communication of a biographical or anecdotal nature that refers to Dr. Coleman's life and work, both in India and in Canada, from anyone who remembers him.

Submitted by D.K. McE. Kevan

THE ENTOMOLOGICAL SOCIETY OF CANADA

BUDGET FOR 1981

(approved by Governing Board 8 October 1980)

RECEIPTS	Can. Ent.	Memoirs	Society	Total
Memberships 750 @ \$35	\$ 7,500	\$ ---	\$18,750	\$ 26,250
Students 150 @ \$10	---	---	1,500	1,500
Subscriptions 1,100 @ \$45	49,500	---	---	49,500
Reprints	15,000	---	---	15,000
Page Charges (1275 pp. @ \$59*)	75,225	---	---	75,225
Memoirs	---	10,000	---	10,000
Interest - Bank	---	---	4,000	4,000
Interest - Bonds	---	---	18,700	18,700
Back Issues	2,500	---	---	2,500
Advertising in Bulletin	---	---	300	300
*Does not include the NSERC grant which runs out March 31, 1981	\$149,725	\$10,000	\$43,250	\$202,975

DISBURSEMENTS	Can. Ent.	Memoirs	Society	Total
Publishing the Can. Ent. (inc. post.)**	\$116,000	\$ ---	\$ ---	\$116,000
Reprints	8,000	---	---	8,000
Bulletin (inc. cost of adv.)	---	---	9,000	9,000
Office Exp.: rent, telephone, postage	4,500	---	4,500	9,000
Salaries - Managing Editor (full time)	31,284	3,476	---	34,760
Clerk (3/5 time)	4,750	746	4,750	10,246
Sec. Assist. for Editor	1,500	---	---	1,500
Sec. Assist. for Secretary	---	---	500	500
Executive Secretary	---	---	15,000	15,000
Audit	475	---	475	950
Gold Medal, trophy, brochures, etc.	---	---	900	900
Trustees	1,200	---	1,700	2,900
Committees-Photo Salon Committee	---	---	100	100
Education Committee	---	---	1,000	1,000
Science Policy Committee	---	---	1,000	1,000
Common Names Committee	---	---	1,150	1,150
Employment Subcommittee	---	---	575	575
Contingency Fund	---	---	5,000	5,000
Sundry	500	---	500	1,000
Support of Other Organizations -	---	---	---	---
B.C.C. (400 Can. members @ \$5)	---	---	2,000	2,000
SCITEC (900 members @ .50)	---	---	450	450
TIEG	---	---	300	300
C.N.C.I.A.W.P.R.	---	---	50	50
Regional Societies (grant @ 100 each)	---	---	700	700
Annual Meeting - Grant	---	---	2,500	2,500
- Honorees	---	---	1,200	1,200
Governing Board Expenses - Interim Mtg.	---	---	1,500	1,500
- Annual Mtg.	---	---	13,000	13,000
- Other Mtgs.	---	---	1,300	1,300
President's Discretionary Fund	---	---	750	750
	\$168,209	\$4,222	\$69,900	\$242,331

TOTAL DISBURSEMENTS \$242,331
 TOTAL RECEIPTS 202,975

DEFICIT \$ 39,356

**On 15 October 1980 representatives from Runge Press met with J.M. Campbell and me to discuss a raise in the basic rate for Can. Ent. It has not been raised since 1975, so we agreed to a raise from \$44.00 to \$49.50 effective with the July 1980 issue. This was partially anticipated and is included in the item of \$116,000.

AUDITORS' REPORT - see June ESC Bulletin, vol. 12(2): 26-27, 1980.

COMMITTEE REPORTS

SECRETARY'S 1980 ANNUAL REPORT

During the past year, the Secretary has maintained and updated the filing system of the Society; recorded minutes of the Executive Council meeting, Governing Board meetings, and Annual meeting; prepared agendas for these meetings and sent out notices of these meetings where appropriate to the Executive, Trustees and members of the Board of Governors; prepared ballots for the elections; notified nominees of the election results; arranged for pamphlets of the Society to be printed; distributed minutes, reports, scholarship applications, and other information as required; prepared notices of meetings and Society affairs for publication in the Bulletin; sent out press releases on the Gold Medal and Hewitt Award winners; provided some liaison between committees of the Society and the Executive, and, to some extent, between our Society and the Affiliate Societies; considerable time has been spent on handling the correspondence of the Society.

I wish to thank the members of the Board of Governors and Trustees for their cooperation, support and advice during the past year. It has made my position as Secretary of the Society a much easier task.

J.E. Laing

FINANCE COMMITTEE

I. Introduction

The details of the FCs discussions and recommendations are given in the committee's, "Annual Report for 1980". Additional references are the "Records of Meetings", for 1980, copies of which were sent to the Secretary.

II. Recommendations

The following recommendations on the business of the ESC are submitted for consideration;

- 1) The grant to a regional society towards the annual joint conference should be raised to \$2,500 beginning in 1981. Of this amount, \$1,500 would be accountable and \$1,000 not accountable. (Ref. letter to I.S. Lindsay from J.A. Shemanchuk date 1 August 1980).
- 2) Effective in 1980 the annual honorarium for the Editor of the Bulletin should be increased to \$500 and the honoraria for the other three Trustees raised to \$800.
- 3) The Employment Committee's request for \$575 to pay for the 1981 edition of the, "ESC Members' Resume", booklet be approved and the Committee's proposal that the Dept. of Supply and Services be asked for \$38,500 through its Unsolicited Proposal Program also be supported. (Ref., letter to I.S. Lindsay from R. MacDonald dated 15 August 1980).
- 4) The Scientific Committee's (Biological Survey) request for \$100 for entertainment expenses at its inter-departmental "conversazione" not be approved. (Ref., letter to I.S. Lindsay from A. Downes date 14 August 1980).
- 5) Mr. A. Downes proposal, via the Treasurer, that the ESC contribution to the salary deductions covering Unemployment Insurance and Canada Pension Plan for M. Rideout be increased from 50% to 100% not be approved. (Ref., 1980 contract ESC - M. Rideout).
- 6) A request from an individual from British Columbia, received via the Treasurer, for a grant (amount not stated) to assist with the publication of a monograph on the Odonata of BC, should be forwarded to the Scientific Committee (Biological Survey) for comment prior to further consideration by the FC.

- 7) The \$25,000 NSERC 1980 publication grant to ESC should be administered in the same way as the 1979 grant of \$5,000.
- 8) With Reference to the Treasurer's 1981 Budget:
 - a) ESC official travel estimates should be increased by at least 10% over those for 1980 to a maximum of \$13,000.
 - b) The item of \$15,000 towards the employment of an Executive Secretary should be retained from the 1980 budget.
 - c) The item covering the ESC Membership list should be deleted.

III. Major Comments

In addition to the recommendations on specific financial items, a number of important comments, not all of them new, were made by the FC. They were:

- 1) The ESC cash reserve should always be approximately the amount that would cover the Society's operating budget for one year.
- 2) As the current cash reserve is about equal to the expected 1980 expenditures, no dispositions of the reserve, other than those in effect, need be considered.
- 3) No additional professional advice of the Society's cash investments is needed at present.
- 4) The ESC should be referred to as a, "tax-exempt", rather than a, "non-profit", organization.
- 5) As the Society has not accrued financial resources that would endanger its tax-exempt status, there is currently no need to investigate alternative investment.
- 6) With reference to the proposed publication entitled, "Arctic Insects", decisions are required on the processes of advertising it and selling it so that it is financially self-supporting.
- 7) The number of copies of the, "Arctic Insects" publication that are given away should be severely limited.
- 8) The FC should assist the Treasurer to achieve a balanced budget by:
 - a) Assessing probable income and disbursement levels two years in advance.
 - b) Recommending which items of income should most logically be increased to cover higher estimated disbursements one year in advance.
- 9) Proposed that an ESC member who is familiar with the pesticide industry should be asked to take an interest in the advertising in the Bulletin with the aim of increasing the number of advertisers.
- 10) The Treasurer should discuss with the auditor of the ESC accounts the merit of reporting the Society's security portfolio on the basis of "market value" rather than "book value".

Finally, the FC considers that there should be increased ESC representation on the organizing committee for the 1982 joint ESA-ESC-ESO conference. Also, it is obvious to the FC that there is a need for continuation of the Society's financial austerity policy for the foreseeable future.

J.M. Campbell, D.G. Harcourt, E.G. Munroe, D.C. Herne, I.S. Lindsay, Chairman

The Bulletin would be more interesting if members of ESC and Affiliated Societies made more use of it to express their views and report news items. Only a few members submit items for inclusion, in addition to reports, book reviews and announcements.

Respectfully submitted,
D.M. Davies

SCIENCE POLICY/PUBLIC EDUCATION COMMITTEE

This committee has completed a trial period of two years in which responsibilities of both science policy and public education were assumed by a single committee. The experience has shown, in the opinion of present members, that the two responsibilities cannot be adequately met by a single committee. A recommendation for return of each committee to its original independent status has been made to the Governing Board.

Recommendations for structure and policy of the Public Education Committee were made. These would have the Committee formed ex-officio from Regional Directors, thereby ensuring as far as possible direct two-way communication with affiliate societies for all activities in public education. The chairman, selected by the President from the Directors or from the membership, would be ex-officio a member of the Science Policy Committee.

The Committee met to consider science policy in Toronto, the meeting overlapping with the April meeting of the Executive Council. Meeting with the Science Policy Committee on the morning of the 22nd were Dr. K.G. Davey and Dr. D.F. Mettrick, President and Past President respectively of the Biological Council of Canada; ESC President Turnock met with the Science Policy Committee for the entire day. Members of the BCC executive briefed the committee on current planning of the Federal Government for science. The committee's objective was to develop policies enabling the ESC to guide entomology in making its most effective contribution to science in Canada.

The ESC Science Policy Committee believes that the most effective course open to the Society is to become better informed than any other body on problems of high entomological priority in Canada, and to take initiatives to bring these to the attention of agencies appropriate to their solution. In so doing, the ESC must at all times be mindful of its growing reputation as the constructive voice of professional entomology in Canada, aiming not for the advancement of entomology for the sake of entomologists, but for a role of demonstrable significance in the development and management of biological resources in Canada and for the advancement of science and the benefit of society. Changing circumstances will require that there be various approaches to achieving these objectives; those now apparent to the Science Policy Committee are:

1. That the Science Policy Committee keep under active consideration a dossier of important entomological subjects in need of study in Canada, and that from time to time certain of these, with supporting statements, be recommended to the Governing Board as matters of high priority for the Canadian entomological community. The subjects so recommended by the Science Policy Committee will require further documentation concerning need for the work and methods of approach, for which the Governing Board would appoint a Scientific Committee, which in some instances would seek an unsolicited contract from the Federal Government to support extensive documentation. These subjects then will be brought to the attention of appropriate agencies in government, industry and universities as recommendations from the professional entomological body of Canada.

The intent here is that the ESC take the initiative open to a professional association concerned with the role of entomological science in the affairs of the country in which it operates, and in so doing that the Society achieve the status of a respected partner in shaping the policy of biological science in Canada. The Science Policy Committee would draw heavily upon the knowledge and experience of the ESC membership for suggestion and documentation of entomological matters of major importance requiring attention in Canada, and the Committee would solicit this information in a variety of ways.

2. That the ESC prepare a brief showing the need in government for a continuing, and in some areas increased, permanent research component concerned with the role of insects in the development of natural and food resources in Canada.

The underlying logic for this brief is that in the resource utilization fundamental to agriculture, forestry, fisheries, and recreation in natural areas there is no large industrial sector that might normally be expected to provide a sizeable part of the research and development base for management; and also that management of finite natural resources is better undertaken by government for the general good rather than by industry for short-term financial gain. The Science Policy Committee presented an expanded outline of the brief for consideration of the Governing Board at the annual meeting in Quebec.

W.G. Friend, S.B. Hill, S.R. Loschiavo, J.N. McNeil, R.K. Stewart,
W.G. Wellington, G.B. Wiggins (Chairman)

BIOLOGICAL SURVEY OF CANADA (TERRESTRIAL ARTHROPODS)

Meeting of the Scientific Committee

The first meeting of the Scientific Committee under the new arrangements for the Biological Survey of Canada (Terrestrial Arthropods) (see Bull. ent. Soc. Can. 12(3): 48) took place in Ottawa on 9-10 October, 1980. The expanded committee includes representatives of the National Museum of Natural Sciences and the Biosystematics Research Institute, including their directors. Several representatives of other interested government agencies, invited as guests to be present for agenda items of interest to them, also attended the meeting.

In response to the chairman's summary of the new arrangements in opening the meeting, Dr. L. Lemieux, Director of the National Museum of Natural Sciences, congratulated the Entomological Society of Canada and the Scientific Committee for their efforts in bringing the Biological Survey concept to fruition, for helping to improve communication and cooperation between the Museum, the Biosystematics Research Institute and the Society, and for the support and guidance of the committee in helping the Museum to discover what the scientific community would like their Museum to do for them. He envisaged making the Biological Survey of Canada as secure as possible in the Museum. He hoped that additional contacts with scientists concerned with other organisms, and contacts with government colleagues, would then allow survey components in addition to that for the terrestrial arthropods to be developed. He noted that this proposed Biological Survey of Canada is not a new orientation for the Museum, since some existing work is basically of a survey nature, but rather a mechanism that allows the Museum to receive guidance from the scientific community.

Dr. J.M. Campbell, on behalf of the Director of the Biosystematics Research Institute, expressed pleasure that the project had found a home in the National Museum of Natural Sciences, and also congratulated the committee in helping to foster cooperation between the Museum and the Institute. Biosystematics Research Institute was fully in agreement with the work of the Biological Survey project, and willing to cooperate, within departmental constraints, as indeed the Institute was already doing in the Yukon.

Scientific Projects

The committee discussed reports prepared for the meeting, that dealt with selected subjects of importance to an exploration of the Canadian fauna. These reports were intended to provide broad information about the present state of the subjects, from which specific objectives could be planned. The documents are to be developed further (some for eventual publication in the Bulletin) to allow a precise plan or action to be defined at the next meeting. Active projects and their status are described briefly below; additional people interested in participating in a particular field project should contact the person listed.

Illustrated keys to the families of insects in Canada

This project is in progress under the direction of Dr. Scudder: Keys to small orders have been drafted, and those for large orders are in preparation, with drafts perhaps available in 1981; time-consuming preparation of final illustrations will then be necessary.

Arthropod fauna of the Yukon (J.A. Downes)

The Yukon project was initiated in 1978: field work has been carried out by parties from the University of British Columbia 1978-, from the Royal Ontario Museum 1979-, and from the Biosystematics Research Institute 1980-. A position paper is well-advanced. Future plans, for publications, etc., are being formulated.

Arthropods of special habitats

A project that will focus on selected discrete habitats of particular interest in Canada is still being defined.

Arthropod fauna of the prairies (G. Pritchard)

This study is in the early planning stages: "undisturbed" sites for study are being selected from a lengthy list that has been compiled; comparisons with "disturbed" sites are being considered.

Arthropod fauna of glacial refugia in Canada (J.V. Matthews)

Initiatives on the Beringian refugium are being developed in conjunction with the Yukon project. A feasibility study for work on refugia in Northern Quebec has just begun. Selection of these refugial sites for study was partly dependent on the availability of fossil evidence.

Aquatic insects of freshwater wetlands (D.M. Rosenberg)

This project, stimulated mainly by the present lack of knowledge of the fauna of wetland, lack of information on larval stages, and the importance of this extensive habitat type for waterfowl staging and breeding, is in the early planning stages.

Soil fauna

In view of the magnitude of the problems of understanding the Canadian soil fauna, resources are inadequate to develop active field plans. However, a statement of ecological roles and deficiencies in knowledge is in preparation.

Modes of seasonal adaptation in the insects (Review)

This series continues a synthesis of knowledge especially relevant to the Canadian environment, by the Secretariat. Part II, a review of insect dormancy, is in progress.

Regional coordination

Local initiatives in study of the fauna are being encouraged by Drs. Colbo (Newfoundland and Atlantic), Francoeur (Quebec), Danks (Ontario), and Scudder (British Columbia), and through the projects in the prairies and Yukon (see above).

Entomological Manpower

Earlier initiatives to prepare letters to appropriate agencies on this questions faltered from lack of documentation on some aspects of the foreseen demand, the real need, and the present and future supply of manpower for systematic entomology. A subcommittee comprising Drs. McMullen (Chairman), Peck and Smith, have undertaken to accumulate salient information to support an eventual submission through the Entomological Society of Canada, concerning manpower for systematics in general and for certain areas in particular. Any source documents of potential interest will be gratefully received by Dr. McMullen.

Ancillary Funding of Biological Survey Orientated Projects

The committee decided that it was appropriate for the committee: 1. to attempt, as a third party, to influence the flow of funds from funding sources to scientists, in ways supportive of Biological Survey orientated work; 2. to solicit funds for the use of the Secretariat (within National Museum of Natural Sciences guidelines) for furthering the research objectives of the survey; 3. to encourage the formation of consortia for the funding and execution of large projects of high priority; but it should not, as a committee, solicit funds for use by committee members in large projects of this sort.

Data Banking of Faunal Information

The committee considered data handling (the subject of some recommendations in the Final Report of the Pilot Study in a preliminary way, through a presentation by representatives of the National Inventory Programme of the National Museums of Canada, and a general discussion. A subcommittee (Drs. Smith, McAllister and Danks) was then established to consider appropriate future action.

Regional Centres

The committee asked Drs. Danks, Scudder and Smith to draft a statement for possible publication that reflected the recommendations of the Final Report of the Pilot Study on regional centres.

Comprehensive National Fauna Series

The committee agreed that a comprehensive continuing Canadian faunal (and floral) publication series, especially for systematic monographs, was highly desirable. (Dr. Campbell stated that the BRI handbooks would in future deal only with groups of clear economic significance or popular appeal). The committee agreed in principle that such a biological series should be the responsibility of the National Museum of Natural Sciences, which is concerned with the acquisition and dissemination of basic knowledge on the fauna and flora of the country, and Dr. Danks and Mr. Downes were asked to draft a recommendation to this effect, with explanatory notes.

Biological Survey Symposia

Mr. Downes reported that eight papers from the 1978 symposium "Temporal and spatial patterns in the Canadian insect fauna" were in press, in a single issue of The Canadian Entomologist. The committee agreed that a symposium, related to the developing projects of the Biological Survey, and tentatively entitled "Faunistic studies on North American insects" should be suggested to the organizing committee of the 1982 joint meeting of the Entomological Society of Canada and the Entomological Society of America in Toronto.

General Activities of the Secretariat

Dr. Danks will visit entomological centres during the next several months, as during the earlier Pilot Study, to communicate and receive information related to the general programme of the Biological Survey of Canada (Terrestrial Arthropods).

COMMITTEE FOR A STUDY OF THE COST OF DESTRUCTIVE INSECTS IN CANADA

The proposal, approved at the meetings in Vancouver, was given limited circulation and following initial contacts a meeting was held in Ottawa on May 5 with Dr. LeRoux and Mr. Prentice of Agriculture Canada and Drs. Bouchier and MacDonald of Fisheries and Environment Canada. Drs. Cooper, McEwen and Turnock represented the Entomological Society of Canada at that meeting.

The officials from both Agriculture and Environment supported the proposal but felt that:

1. The 3-year time frame was too long for DSS funding and
2. The proposal was overly ambitious in terms of the number of crops to be studied.

As a result of that meeting, the proposal was reduced to consider four crops, viz., apples, potatoes, onions and the spruce-fir forest with the concept being that this would form an initial study and the other areas outlined in the original proposal would be dealt with subsequently.

The revised proposal was submitted to Supply and Services on June 22nd.

President Turnock was advised by John R. Holinsky (DSS) on August 22nd as follows:

"An interdepartmental meeting has now been held to evaluate your unsolicited proposal entitled: "Costs of Destructive Insects in Canada".

I am pleased to inform you that the Department of Agriculture has shown interest in your proposal and is studying the possibility of sponsoring it through a contract, subject to negotiation of the statement of work."

Mr. F.J. McLennan has been named Science Procurement Manager for the project.

F.L. McEwen, Chairman

COMMITTEE ON THE COMMON NAMES OF INSECTS

The "Quebec" list has been transcribed into computer storage (xerox sigma 7 operating under CPV). A master print-out in English, French and Latin has been produced and is in the process of being printed for distribution to the committee members. Due to an unfortunate delay with some of the software, the production of this print-out has had to be delayed far beyond the proposed deadline.

Once the committee members have made their comments, corrections and modifications on this master list, it will be essential to have a small sub-committee of three who will meet and produce a final version for presentation to the society. This subcommittee should meet during the summer of 1981 for several days and should work towards having a final version ready for the 1981 meeting of the society.

Several names are still being considered by the committee. For various reasons none of these names has yet been accepted. No new submissions have been received, although forms have been requested by several people.

The submission form and the ballot have both been translated into French with a view to producing an appropriate bilingual set of documents that will be more acceptable to the whole society. Once the translations have been approved a new supply of forms will be printed.

W.Y. Watson, Chairman

BY-LAWS COMMITTEE

The work of the By-laws Committee has been conducted by correspondence amongst its members with guidance from the President and the Secretary.

- (1) In response to the Governing Board's action (Minutes Governing Board Meeting, September 30 - October 1, 1979; 6.2.16.1) the By-laws Committee recommends the following amendment to the By-laws of the Society:

5. Special Member ...

a Fellow: A member of the Society (Active Member, Honorary Member, Emeritus Member) who has made a major contribution to entomology may be named a Fellow of the Society. The status of Fellow shall be retained whether or not a Fellow remains a member of the Society.

- (2) In response to the Governing Board's action (Minutes Governing Board Meeting September 30 - October 1, 1979; 6.2.14 - Motion: J.N. McNeill moved, P.W. Riegert seconded that the first recommendation of the By-laws Committee regarding nominations to the Membership Committee from the Affiliate Societies be referred back to the committee for further study. The By-laws Committee draws to your attention that each Affiliate may appoint a member to the Membership Committee. There is no nomination. Also, each Affiliate Society appoints a Director to the Board, a member to the Insect Common Names and Cultures Committee, and to the Scholarships Committee.

The By-laws Committee recommends, in an effort to procure information from Affiliates, that prior to the annual meeting the Secretary of the Entomological Society of Canada shall submit to the incumbent Entomological Society of Canada Director from each Affiliate Society a form inquiry to be completed and returned to the Secretary by the annual meeting. The Secretary of the Entomological Society of Canada shall after each annual meeting inform the incumbent Affiliate Director that it is part of his responsibility to provide the Secretary of the Entomological Society of Canada with information relating to the Affiliate and the Society and to act as the liaison between the Society and the Affiliate.

If this recommendation is accepted, the added responsibilities of the Affiliate Director and the Secretary should be included in the Standing Rules.

Andre Comeau, Douglas M. Davies, M. Ellen MacGillivray, Chairman

EMPLOYMENT COMMITTEE

The Employment Committee (EC) compiled and published the second edition of the booklet containing the resumes of E.S.C. members who are in search of employment. A total of 56 resumes were received (31 Ph.D., 19 M.Sc., 6 B.Sc.). Three hundred copies of the booklet were printed and distributed to the employers of entomologists in Canada. Responses from employers and educators of entomologists have encouraged the continued publication of this booklet.

The EC compiled a list of employers of entomologists in Canada. Copies of this list were sent to all biology departments in Canada to facilitate contact between students and potential employers.

The EC performed a brief review of the 1975 manpower survey [Bulletin, E.S.C., Sept. 1976, Vol. 8(3)] in order to determine if that survey did adequately forecast the employment situation of the past five years. One hundred and eighty employers of entomologists in Canada were surveyed. Eighty-four percent of the questionnaires were returned from employers who employ a total of 371 entomologists. The total number of entomologists employed by university, federal government, and industry has declined slightly. The number of entomologists employed by provincial governments has declined substantially. These findings are not in agreement with the 1975 survey, which predicted an increase in employment by provincial governments and industry due to the implementation of the Lamontagne Report. The number of entomologists who have retired during the past five years (51) was predicted with relatively good accuracy (prediction 67). The total number of job vacancies from 1975 to 1980 was 88 vs. the prediction of 99. However, significant errors in predictions within disciplines were evident in six of the eleven disciplines. These poor predictions were probably a result of: a) a lack of change in research policy and emphasis that was expected; b) transfer of personnel that was not predicted.

The only major problem predicted by the 1975 survey that could not be verified was the imbalance between supply and demand of entomologists in a variety of disciplines.

A full report of the 1980 survey will be published separately.

The Employment Committee wishes to thank everyone who has helped with its work during 1980.

G. Kinoshita, S. MacDonald, D.J. Madder, Chairman

SCHOLARSHIPS COMMITTEE

Five students applied for the E.S.C. 1981 Post-Graduate Scholarships Awards. The Scholarships Committee recommends that two scholarships be awarded. The successful candidates are: Miss Kathryn Mae McGinnis, University of Manitoba and Mr. Felix Alexander Herman Sperling, University of Alberta.

Contributions for 1980 to the Scholarships Fund up to 31 August amounted to \$1,291.00 from thirty donors. The fund is currently worth \$11,468.00, and accrued interest forwards as of 1 January 1981 will be \$1,182.00.

Contributory envelopes and "In Memoriam" cards for donations to the Scholarships Fund were mailed to all members of the Society by the Treasurer in January, 1980.

The continued support of all members is earnestly solicited to:
a) increase the number of donors; b) increase the number of students applying for E.S.C. Scholarships.

Dr. B.S. Hewing, Dr. W.B. Preston, Mr. E. Johnson, Dr. A.D. Tomlin,
Prof. J.G. Pilon, Dr. J.P. Bourassa, Mr. R.F. Morris, Chairman.

SCHOLARSHIPS FUND

LIST OF DONORS 1979

Anonymous (1)	J.F. McAlpine, Ottawa, Ont.
G.E. Ball, Edmonton, Alta.	J.M. McLeod, Vancouver, B.C.
P. Belton, Burnaby, B.C.	R.F. Morris, St. John's, Nfld.
R. Burrage, Saskatoon, Sask.	S. Neff, Louisville, Ky.
A. Campbell, St. Andrews, N.B.	C.E. Osgood, Boise, Id.
R.F. DeBoo, Sault Ste. Marie, Ont.	H.G. Philip, Vegreville, Alta.
C.J. Demars, Berkeley, Ca.	B.J.R. Philogène, Ottawa, Ont.
W.G. Evans, Edmonton, Alta.	D.C. Read, Charlottetown, P.E.I.
T. Finlayson, Burnaby, B.C.	H. Riedl, Berkeley, Ca.
D. Finnamore, Fredericton, N.B.	D.M. Rosenberg, Winnipeg, Man.
F.J.H. Fredeen, Saskatoon, Sask.	L. Safranyik, Victoria, B.C.
D.C. Herne, St. Catharines, Ont.	L.B. Smith, Winnipeg, Man.
E.M. Hobbs, Lethbridge, Alta.	C.R. Sullivan, Sault Ste. Marie, Ont.
T. Hidaka, Japan	K. Terata, Japan
S.B. Hydon, Ft. Sam Houston, Texas	L.C. Thompson, Manhattan, Ks.
D. Levin, Guelph, Ont.	N.V. Tonks, Victoria, B.C.
I.S. Lindsay, Ottawa, Ont.	F.E. Webb, Fredericton, N.B.
S.R. Loschiavo, Winnipeg, Manitoba	R.H. Wigmore, Yarker, Ont.
M.E. MacGillivray, Fredericton, N.B.	A.T. Wilkinson, Vancouver, B.C.
A. MacPhee, Kentville, N.S.	P.W. Wood, Castlegar, B.C.

*Miss Kathryn Mae McGinnis,
University of Manitoba,
receives one of the two
1981 ESC Graduate Scholar-
ships from President
W.J. Turnook on 7 October
1980 at the Society's
banquet in Quebec City.*



MEMBERSHIP COMMITTEE

The membership in this committee has been established for 1980-81. A document which outlines the advantages of becoming a member of the Society is being prepared. Once completed this will be sent to all members of the committee for comment and then it will be mailed to the chairmen of all of the Entomology and Biology Departments in Canada and to selected Departments in the USA.

W.G. Friend, Chairman

REPORT OF REPRESENTATIVE TO CANADIAN STANDARDS ASSOCIATION COMMITTEE ON COMMON NAMES FOR PEST CONTROL CHEMICALS

A meeting of the Canadian Standards Association Committee on Common Names for Pest Control Chemicals was held on August 2, 1979. Ten common name proposals were considered and six were approved for adoption.

A revision of the CSA Standard 2-143 that includes all the common names (approximately 500) that have been approved to date has been published and is now available from the Canadian Standards Association, 178 Rexdale Boulevard, Rexdale, Ontario M9W 1R3. The cost is \$15.00 per copy.

L. Roadhouse

TENTH ANNUAL INSECT PHOTO SALON 6-8 OCTOBER 1980

The judging has now been completed for our 10th Annual Insect Photo Salon and this brings me to the happy task of announcing the award winners.

To those of you whose entries were accepted and especially to those whose entries won awards, on behalf of the Entomological Society of Canada and the Société Entomologique du Québec we offer our hearty congratulations. To those who were not successful this time we extend our sincere wish that you will try again and that success will be yours in future salons.

Those who watch and photograph insects and submit your work to salons, where it may be seen by many, contribute to our knowledge of insects and therefore to the science of entomology. Your photographs may reveal some aspect of insect behaviour, ecology, or perhaps a stage in the life cycle of an insect heretofore unseen by scientists.

For the sake of interest, partly my own, I analysed the entries with respect to the major groups of insects and related arthropods, as I did last year. The results were much the same, with the lepidoptera as the most popular subjects.

	<u>Prints</u>	<u>Slides</u>	<u>Total</u>
Lepidoptera (Butterflies and Moths)	46%	34%	35%
Hymenoptera (Bees, Wasps, Ants, etc.)	-	5%	5%
Hemiptera (True Bugs, Leafhoppers, etc.)	13%	10%	10%
Araneae (Spiders)	8%	11%	11%
Odonata (Dragonflies and Damselflies)	-	6%	6%
Coleoptera (Beetles)	13%	9%	9%
Diptera (Two-winged Flies)	-	2%	2%
Orthoptera (Grasshoppers)	-	4%	3%
Dictyoptera (Mantids, Roaches, etc.)	4%	2%	2%
Neuroptera (Lacewings, etc.)	-	2%	2%
Grylloptera (Crickets, etc.)	8%	2%	2%
Crustacea (Crabs, Woodlice, etc.)	4%	1%	1%
Megaloptera (Dobsonflies)	-	1%	1%
Parasitiformes (Ticks)	-	.4%	.4%
Isoptera (Termites)	-	1%	1%
Scorpiones (Scorpions)	-	.4%	.4%
Trilobita (Trilobites)	-	.4%	.4%
Unknown (unidentifiable from the title)	4%	11%	10%

As there was some difficulty arranging judging for the salon, we were late in advertising. In spite of this the Photographic Society of America will grant our salon general recognition this year. However, it is expected that we meet the deadline in future salons (i.e. we must apply for recognition at least 6 months before our closing date and to do this we must have all of the information pertaining to the salon by this time).

A total of 137 entry forms were mailed out, most of these to last year's entrants. The number of entries is down from last year, probably due to our tardiness in advertising. It is recommended that the chairman have all information necessary to produce the entry forms by January 31 (i.e. names and qualifications of judges; dates; place; name and address of the local convener).

I would recommend that next year fees for slides remain the same (at \$3.00) and the fees for prints be lowered to \$3.50. As the number of prints entered were down considerably, \$4.00 may have been too high (the usual fee for prints ranges from \$3.00 to \$3.50. With punctual advertising, hopefully resulting in a greater number of entrants, and the suggested fee schedule, our salon should become nearly self-sufficient.

The question has been raised regarding the keeping of a list of insect photographers, generated by the Insect Photo Salon. The purpose of the list would be as a resource for publications. The chairman is in possession of such a list, in the form of copies of entry forms from the 9th Annual Insect Photo Salon. Some effort would be required to convert this to a more useful form (i.e. with photographers listed according to subject matter - perhaps at the order level). If such a list is in the care of the Photo Salon Chairman, it could be updated every year. Another way of obtaining lists of photographs is to advertise in the appropriate journal (e.g. News of the Lepidopterists Society, P.S.A. Journal, Coleopterists Bulletin, etc.).

The Jury of Selection

Mr. Claude Bureau, Bureau Boulay Co., Ste. Foy, P.Q.

Mr. Eugen Kadl, 870 du Roi, Québec, P.Q. (Professional Photographer;
Nature Photographer)

Mr. Michel Krieger, Département de Biologie, Université Laval, Québec, P.Q.
(Amateur Photographer; Scientific Photographer)

Print Statistics

24 Prints Submitted, 11 Prints Accepted

(6 Entrants representing 3 Canadian Provinces and 2 States)

Canada:	Alberta	1	U.S.A.	Illinois	1
	Ontario	1		New York	1
	Quebec	2			

Award Winning Prints

1st	Webb, T.	<i>Colias gigantea</i> "A" feeding on Alfalfa
2nd	Webb, T.	Great Spangled Fritillary "A"
3rd	Webb, T.	Red Admiral "A"

Slide Statistics

248 Slides Submitted, 199 Slides Accepted

(62 Entrants representing 3 Canadian Provinces, 13 States and 5 other countries)

Canada:	Alberta	2	U.S.A.:	California	5
	Ontario	8		Florida	5
	Quebec	4		Illinois	3
				Louisiana	1
				Massachusetts	2
Australia		1		Michigan	6
England		1		Minnesota	3
France		1		New Jersey	4
Republic of South Africa	1			New York	1
West Germany	4			North Dakota	1
				Ohio	4
				Texas	3

Award Winning Slides

1st	Dyment, Norm	Spider Traps a Meal
2nd	Medoff, John K.	Emerging Hornet #3
3rd	Timmer, Joe	4th Instar Cecropia

Honorable Mention:

Charbonnet, D.	Concave Longhorn Beetle
Cherof, M.A.	Sphinx Moth Larva Feeding
Goldman, S.	Ten Spot Dragonfly #5
Larsen, A.T.Jr.	Pandora Sphinx Larva #2
Miller, F.	Cabbage Butterfly - Female
Parsons, H.B.	Beetle with Prometheus Moth Larva
	Yellow Jacket #3
Schewene, R.G.	Paper Wasp on Nest
	Shield Bug and Nymphs
Toman, F.E.	Paired Damselflies
Wieden, D.	Fighting Spiders with egg sack #1
Wolander, D.	Imperial Larva Eating

We wish to thank everyone who contributed in any way to the success of the salon. As you all know, there is a lot of work involved in organizing a photographic salon and your contributions help to lighten the load for everyone.

Dr. William B. Preston, Chairman
Dr. Conrad Cloutier, Local Convener

"Natural Death" for lepidopterous Insects



Insect death from "natural causes" in a poison-free environment has been accomplished with the introduction of Dipel.

Dipel is a biological insecticide containing live microscopic bacteria in the spore stage. This bacterium (*Bacillus thuringiensis* or B.t.) is a naturally-occurring disease that is fatal to larvae of the lepidoptera. And this is the only life-form that B.t. can infect.

HOW IT WORKS

Dipel contains B.t. spores plus protein crystals named delta endotoxin. When a larva ingests a leaf sprayed with Dipel, the crystal endotoxin begins to breakdown the worm's gut-wall. Feeding stops within minutes. As the gut-wall lining decomposes, the bacterial spores penetrate the body and grow rapidly.

Within a day the larva becomes discoloured and is dead in three to five days.

WHY DIPEL IS SAFE

Dipel attacks only the larvae of lepidopterous insects. It is non-toxic to humans, animals, birds, fish and beneficial predaceous and parasitic insects. In seven years of widespread use not one toxicity case has been reported.

WIDE RANGE OF USE

Dipel is used for control of cabbage looper, diamond back and imported cabbageworm on vegetables. Tobacco and tomato hornworms; European (Essex) skipper.

Trees and shrubs:- tent caterpillars, spruce budworm, gypsy moth, bagworm, cankerworm, webworm and spanworm.



For detailed
information write to:

DIPEL*

SAFE, NATURAL INSECTICIDE

ABBOTT LABORATOIRES, LIMITED • Chemical and Agricultural Products Division, Box 6150 • Montréal, Canada

*R.D.T.M.

RESULTS OF QUESTIONNAIRE CONCERNING THE SOCIETY

1. Response. A total of 354 questionnaires were returned, 38.9% of our membership. This was made up of 46% from our 493 Canadian members, 32% of our 341 U.S.A. members and 24% of our 74 members from other countries.

2. Reasons for belonging to E.S.C. Most replies listed more than one reason for belonging. The proportion of respondents listing the various reasons were:

Respondents from	N	Annual Meetings	Canadian Entomologist		Support E.S.C.	Other Reasons
			Publish	Receive		
Canada	227	.38	.50	.78	.82	.08
U.S.A.	109	.16	.69	.97	.74	.06
Other	18	.05	.50	1.00	.44	.28
<hr/>						
TOTAL	354	.29	.56	.85	.78	.07

The other reasons for belonging fell into three categories: to maintain professional status and liaison with other entomologists (13); to keep informed on Canadian entomology and entomologists (15); and because of characteristics of E.S.C. (high quality, emphasis on Canadian insect fauna) (2). These responses indicate that receipt of Can. Ent. is the main reason for belonging particularly for non-Canadians. Publication in Can. Ent. is a very important reason for joining, particularly for members from U.S.A. Of those respondents who belong because of Can. Ent., the percentages indicating they belong to publish, to receive, or to do both are: Canada - 6, 39, 55; U.S.A. - 2, 30, 68; other - 0, 50, 50. It appears that although receipt of Can. Ent. is more important, the ability to publish is also an important reason for joining E.S.C. I suspect that we would lose members if publication were opened to non-members.

3. Number of Publications vs. Reasons for Joining. Most respondents provided the number of papers that they published in Can. Ent. and in other journals during the past 3 years. The average number of papers/respondent giving each reason for joining was:

	Canada		U.S.A.		Other foreign	
	Can. Ent.	Other (N)	Can. Ent.	Other (N)	Can. Ent.	Other (N)
Participate	1.4	3.4 (75)	1.5	4.4 (16)	0	9.0 (1)
Publish	1.7	3.8 (104)	1.2	5.3 (75)	1.2	6.6 (8)
Receive	1.3	3.5 (155)	0.9	5.0 (103)	0.8	7.5 (17)
Support	1.2	3.8 (161)	0.8	4.8 (79)	0.4	5.1 (7)
Other reasons	1.3	3.7 (19)	0.6	8.0 (7)	2.0	8.0 (5)

The number of responses is in parenthesis.

Canadian members who joined to participate in annual meetings or to publish in Can. Ent., published slightly more papers than those giving the remaining reasons. The results for members from the U.S.A. were similar. Other foreign members, excepting those who joined to publish, generally published few papers in Can. Ent. The large number of papers published in other journals suggests that a campaign among members to encourage publication in Can. Ent. would be a logical first step if we wished to increase the number of manuscripts submitted.

4. Comments. More than half (57%) of the respondents took this opportunity to comment on the E.S.C. Comments on publications were made by 23% of the respondents and comments on other aspects of Society operations by 39%. Many respondents commented on several topics. A summary of the comments can be requested. These comments will be studied by the Executive, Governing Board and

appropriate committees with the view to improve the Society.

4.1. General comments. Responses in this area included a large number addressed to problems facing us in Science Policy and Public Education as well as a smaller number on the general operations of the Society. I was particularly pleased that virtually all the respondents from other foreign countries, several of those from the U.S.A. and one Canadian took the opportunity to complement the E.S.C. on the high quality of the Society and its publications.

4.2. Comments on Publications. The comments on Can. Ent. and the Bulletin have been referred to the Publications Committee and the Editors. I think that all concerned in producing our publications will find the comments interesting and useful. Comments on the contents of Can. Ent. reveal a continuing misconception in the minds of some members, i.e., that the Editor deliberately selects papers on some sub-disciplines of entomology and rejects others. This is not true -- the papers published reflect the type of paper submitted, subject only to selection on the basis of the standards of Can. Ent. Similarly, some correspondents want more news of members in the Bulletin, but only a few of us remember to send the Bulletin Editor these newsy items. I hope we'll all try harder, starting now.

Copies of the full report can be obtained from Dr. W.J. Turnock, Research Station, Agriculture Canada, 195 Dafoe Road, Winnipeg, Manitoba R3T 2M9. (See also "Report of the President" in this Bulletin.)

NRC RESEARCH JOURNALS: PUBLICATION POLICY

Over the past several years we have been very concerned about possible changes in the publication of the NRC research journals as a result of a directive from Treasury Board to transfer the publishing operations from NRC to the private sector. Last fall NRC received over 1700 signatures on petitions as well as many letters protesting against such a transfer. I am very pleased to inform you that we have now received a renewed mandate from Treasury Board to continue the publication of the research journals for a further period of five years. Before expressing my appreciation and thanks to the members of the scientific and engineering communities for their concern and massive support, I would like to outline the activities of the NRC Advisory Board on Scientific Publications, the action taken by NRC, and the response from Treasury Board.

The Advisory Board on Scientific Publications has engaged in a survey of the sponsorship of Canadian journals of research, in the course of this survey consulting the scientific community and societies. It has studied the requirements for maintaining and perhaps improving the

Ces dernières années, nous avons été vivement préoccupés par les possibilités de modification de la publication des journaux de la recherche du CNRC comme conséquence d'une directive du Conseil du Trésor voulant que les activités d'édition du CNRC soient transférées au secteur privé. L'automne dernier, le CNRC a reçu plus de 1 700 signatures (pétitions) et de nombreuses lettres de personnes qui s'opposent à un transfert de ce genre. Je suis très heureux de vous informer que nous venons de recevoir du Conseil du Trésor un prolongement de mandat de cinq ans pour la publication des journaux de la recherche. Avant de remercier les membres de la communauté scientifique et technique de leur intérêt et de leur solide appui, je voudrais donner un aperçu des activités de la Commission consultative des publications scientifiques (CNRC), des démarches prises par le Conseil et de la réponse du Conseil du Trésor.

La Commission consultative des publications scientifiques a mené une enquête sur le parrainage des journaux canadiens de la recherche, consultant par le fait même la communauté et les sociétés scientifiques. La Commission a étudié les exigences du maintien et peut-être de l'amélioration

quality of the present publishing program. In January, the Board submitted a report to the National Research Council in which it recommended that the redaction office of the NRC journals should be retained within NRC and that the entire publishing operation of eleven NRC journals and of grants to other journals (the program now administered by NSERC) should be maintained for the present in order not to threaten or injure the important service it has performed. However, the Advisory Board was concerned that the greater involvement of the scientific and engineering societies in publishing be encouraged, that a greater role for the private sector in scientific publishing be developed, and that the funding system for the eleven NRC journals and the grant-supported journals be made fair and equitable.

The National Research Council prepared a submission to Treasury Board in which it asked for a mandate to continue the publication of its research journals for a further period of five years. Because of the federal elections in February, the response from Treasury Board was delayed. However, on August 11th, 1980, the President of NRC received a letter from Treasury Board in which approval was given for the publication of the NRC Journals as requested in the submission. During the five-year period, NRC, with the help of its Advisory Board on Scientific Publications, is to continue to investigate ways and means for increasing the participation of the scientific and engineering societies and of the private sector in the publication of the Journals.

The opinions of the scientific and engineering communities have had a great effect in bringing about such a favourable response from Treasury Board. I would like to express my thanks for your enthusiastic support and hope that we can look forward to continuing collaboration in scientific publishing.

It would be very much appreciated if you could pass on the information contained in this letter to the members of your society.

Yours sincerely

B.A. Gingras
Vice President (External Relations)
Le Vice-président (relations extérieures)

National Research Council
Ottawa, Canada K1A 0R6
25 August 1980

du programme d'édition actuel. En janvier, la Commission a présenté un rapport au Conseil national de recherches, recommandant que les services rédactionnels des journaux du CNRC restent au sein du CNRC et que l'ensemble des activités d'édition des onze journaux du Conseil et des subventions accordées à d'autres revues (programme administré actuellement par le CRSNG) soient retenues pour le moment afin de ne pas porter atteinte à un service important. Toutefois, la Commission consultative désirait favoriser une plus grande participation des sociétés scientifiques et techniques dans le secteur de l'édition; encourager le secteur privé à jouer un rôle plus important dans l'édition scientifique et voir à ce que le système de subventions pour les onze journaux du CNRC et d'autres revues soit juste et équitable.

Le Conseil national de recherches a présenté un mémoire au Conseil du Trésor, dans lequel il demandait un prolongement de mandat de cinq ans pour la publication des journaux de la recherche. A cause des élections fédérales en février, la réponse du Conseil du Trésor a été retardée. Toutefois, le 11 août 1980, le président du CNRC recevait une lettre du Conseil du Trésor qui autorisait le prolongement demandé dans le mémoire. Pendant cinq ans, donc, le CNRC, avec l'appui de la Commission consultative des publications scientifiques, continuera d'examiner les modalités d'une participation plus active des sociétés scientifiques et techniques et du secteur privé à la publications des Journaux.

Les réactions de la communauté scientifique et technique ont joué un rôle important dans l'obtention d'une réponse favorable du Conseil du Trésor. Je tiens à vous remercier de votre appui enthousiaste et j'espère que nous pourrions compter sur votre collaboration soutenue dans le domaine de l'édition scientifique.

Je vous serais bien reconnaissant de transmettre les renseignements ci-dessus aux membres de votre société.

Je vous prie d'agréer l'expression de mes sentiments distingués.

ASSOCIATION DES ENTOMOLOGISTES AMATEURS DU QUÉBEC



L'Association des entomologistes amateurs du Québec existe depuis le mois de mai 1973.

Depuis sa fondation cette Association s'est montrée très dynamique. Son effectif est actuellement de plus de 200 membres.

Cotisation: Etudiant \$4.00~ Autre \$8.00.

Renseignements concernant l'A.E.A.Q.

Adressez-vous à:

A.E.A.Q., 2400, Chemin Ste-Foy, Ste-Foy,
Québec, G1V 1T2

LES OBJECTIFS DE L'A.E.A.Q.

1. Promouvoir, parmi le grand public, un loisir sain et utile, en proposant l'observation et l'étude de la nature, plus particulièrement le monde si étrange des insectes.
2. Aider et encourager les jeunes qui sont intéressés à l'entomologie.
3. Mettre un local et le matériel nécessaire à la disposition des membres, surtout des débutants, afin de permettre à ceux-ci d'apprendre à monter et à identifier leurs captures.
4. Favoriser l'échange de renseignements et de spécimens entre les membres.
5. Favoriser les relations humaines, la bonne entente, la compréhension entre les entomologistes amateurs de tous âges.
6. Assurer la conservation d'une partie de notre patrimoine scientifique.
7. Assurer un renouvellement des entomologistes en formant de jeunes.

PRINCIPALES ACTIVITÉS DE L'A.E.A.Q.

1. Réunions mensuelles.
2. Congrès annuel.
3. Publication de "Fabriques" (10 numéros par an, chaque avec 15-20 pages).
4. Publication de suppléments qui sont envoyés gratuitement aux membres qui en font la demande.
5. Répondre aux demandes de renseignements qui lui sont adressées.

De quelle façon l'A.E.A.Q. peut-elle vous venir en aide?

- en vous aidant pour l'identification de vos spécimens,
- en vous donnant les indications nécessaires sur la chasse, le montage et la conservation de vos captures,

- en mettant à votre disposition (au 2400, Chemin Ste-Foy) un local où vous pouvez utiliser le matériel (loupes et documentation),
- en distribuant gratuitement aux membres qui en font la demande, certains travaux publiés par l'A.E.A.Q.

*Frère Firmin Laliberté
of Quebec City receives
the 1980 ESC Norman
Criddle Award for
excellence in amateur
entomology from
President W.J. Turnook.*



MEETING ANNOUNCEMENTS

American Association for the Advancement of Science (AAAS) will meet on 3-8 January 1981 at Toronto, Canada. For details write: Meetings Office AAAS, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036, U.S.A.

The 14th Annual Northeastern Forest Insect Work Conference will be held 24-25 February 1981 at the Ramada Inn in Bangor, Maine. Tentative program plans are for workshop sessions on Tree Genetics, Seed and Cone Insects, Photography, Environmental Monitoring Techniques, plus selected Hardwood and Softwood Insect problems. For further information please contact either: Dr. Mark Houseweart, (207/581-7273) Conference Coordinator or Program Chairperson Suzanne Goldman (207/945-6417).

The North Central Branch of the Entomological Society of America is holding its 36 Annual Meeting on 16-19 March 1981 at the Sheraton Columbus Hotel, Columbus, Ohio. Ted Radcliffe and his program committee are working hard to provide an exciting and informative meeting. For further details contact Dr. Edward B. Radcliffe, Department of Entomology, Fisheries and Wildlife, University of Minnesota, St. Paul, Minnesota 55108, U.S.A.

A workshop on the Biology of Crane-flies will be held at the University of Calgary on Wednesday and Thursday, 18-19 March 1981. Probable speakers and their topics will be: G. Pritchard (structural aspects of growth and development), R.A. Ring (tipulids in extreme environments), M.J. Klug (gut flora), R.W. Merritt (community structure), J. Myers (population changes in introduced crane-flies), G.W. Byers (biology of Chirona), and D. Wighton (fossil tipulids). For further information, please contact: Dr. G. Pritchard, Department of Biology, The University of Calgary, Calgary, Alberta, T2N 1N4.

Workshop on Insect Pest Management with Microbial Agents will be held 12-15 May 1981 at the Boyce Thompson Institute, Ithaca, N.Y. For details contact: D.W. Roberts, Insect Pathology Resource Centre, Boyce Thompson Institute, Tower Road, Cornell University, Ithaca, N.Y. 14853, U.S.A.

BOOK REVIEWS

Advances in Ephemeroptera Biology. J.F. Flanagan, K.E. Marshall (Editors). Plenum Press, New York. xiv + 552 pp. 1980. \$US 48.50, \$CAN 60.00.

This volume presents the proceedings of the Third International Conference on Ephemeroptera held in Winnipeg, Manitoba, from July 4-10, 1979, and as such the editors must be complimented on their speed in getting the material published. In the Preface, they claim that "this volume...represents the state-of-the-art of Ephemeroptera biology at this point of time". I must take umbrage at such a sweeping statement and point out that in fact it is nothing more than a collection of 41 loosely connected papers (they're all on Ephemeroptera) describing the present research interests of those working on the Order. As the proceedings of an international meeting this is an excellent production - containing as one might expect some excellent and some not so good papers; however, as a book representing "the state-of-the-art", it is pretentious. There is, for example, no general presentation of Ephemeropteran biology, taxonomy, ecology or physiology which means that apart from a dozen or so excellent papers, the volume is of little use to anyone outside the field. Many entomologists will refer to these few papers but few will feel the need to buy the book.

The papers are grouped under eight headings - 1) Invitational lecture (D.D. Williams); 2) Phylogeny and Systematics; 3) Faunistics; 4) Biology and Ecology; 5) Behaviour; 6) Methods; 7) Environmental Impact and Toxicology; and 8) Review and Historical Aspects of Mayfly Biology. There is included an Author Index, Taxonomic Index and a Subject Index which give the reader the ability to readily gain access to information. While the Subject Index is not exhaustive, cross-referencing is good. Each paper has its abstract in English, French and German, while the papers themselves are either in English or French.

The Invitational Lecture (D.D. Williams - Applied Aspects of Mayfly Biology) traces the history of man's interest from the earliest times to the present. However, in his discussion on the imitation of Mayflies by fly-fishermen, Williams has missed the excellent book on the subject by J.R. Harris (An Angler's Entomology). A second surprising absence can be found in the paper by Ward and Berner who discuss stream zonation in Colorado. While criticising other workers in the area because of lack of physico-chemical data, or limitations in sampling period, altitudinal gradient, or taxonomic scope, they ignore W.C. Young's (1969) work on the same river system (St. Vrain Creek), despite the fact that Young looked at elevation, bound carbonate, ash content, organic content, temperature and pH.

The three papers on the Phylogenetics of the Leptophlebiidae (W.L. Peters; M.L. Pescador and W.L. Peters; and D.R. Towns and W.L. Peters) provide an interesting discussion into the complexities of the evolution of the Family and include ingenious attempts to unravel the phylogeny within it. Since one of the authors (W.L. Peters) is common to all three papers they tie together rather well. In the Faunistics section, two papers (P.S. Maitland - Habitats of British Ephemeroptera, and R. Sowa - La Zoogeographie, l'Ecologie et la Protection des Ephéméroptères en Pologne) are extremely interesting both in the approaches used and in the material presented. On the other hand a third paper in this section (D.C. Cobb and J.F. Flanagan - The Distribution of Ephemeroptera in Northern Canada) promises a lot in the title but in fact Northern Canada here means 118 streams in six drainage systems with additional data culled from the works of four other authors.

The Section on Biology and Ecology contains three papers (Whelan; Harvey *et al.*; and Zimmerman and Wissing) which are of particular interest in that they are organized clearly enough to be understood by the non-specialist without losing too much detail.

The papers in the Behaviour Section show a marked contrast in presentation. The papers by Friesen *et al.*, Campbell, and by Gyselman for example are clear, concise discussions of their topics, while that of Edmunds and Edmunds includes such statements as "it is well known that...", "we believe that...", or "it is interesting to speculate...". Such expressions are used with abandon without supporting data or references.

The four papers in the Methods section include a concise discussion on "Ephemeroptera Instar Determination Methods" by T.J. Fink, while the papers in the Environmental Impact and Toxicology present four interesting views on Mayfly Toxicology. It is a great pity that a fifth paper pulling these together was not added.

In "Advances in Ephemeroptera Biology" Flannagan and Marshall set out to provide a "state-of-the-art" of Ephemeroptera biology. In this they have failed. Instead we have an accumulation of varied papers showing the current research interests of workers in the area.

J.C. Conroy
Department of Biology
University of Winnipeg

Innovative Teaching in Aquatic Entomology. H.V. Resh, D.M. Rosenberg (Editors), Canadian Special Publications of Fisheries and Aquatic Sciences 43: vi + 118 pp. 1979. Canada \$4.00, other countries \$4.80.

Most of the papers in this publication were presented at two symposia: Innovative Teaching Approaches in Benthic Sciences, held during the 26th Annual Meeting of the North American Benthological Society, May 10-12, 1978, Winnipeg, Manitoba, and Innovative Teaching Techniques in Aquatic Entomology, held during the Annual Meeting of the Entomological Society of America, November 26-30, 1978, Houston, Texas. The thirteen papers presented in this publication can be grouped into (1) an introductory paper (J.C. Morse), (2) primarily classroom/laboratory exercises, (3) primarily field exercises, (4) primarily field exercises, and (4) exercises combining the class/room laboratory and field trips.

J.C. Morse presents the results of a survey of 79 instructors of aquatic insect courses at 71 colleges and universities in North America. He included a list of names and addresses of these individuals as well as a summarized breakdown of their courses and a selection of questions and answers from the questionnaire used. This paper is particularly useful to anyone setting up an aquatic entomology course.

The five primarily classroom/laboratory exercises (Green; Kaushik et al.; Szczytko and Stewart; Berg; Anderson) present an interesting variety of ideas. R.H. Green presents some exercises using simulated data for (1) determining the consequences of using different sample unit sizes to sample organisms with different spatial distributions; and (2) testing the null hypothesis that there is no change in abundance of an indicator species in an impacted area when the data violate assumptions of standard tests. Some limitations and pitfalls of sampling techniques are hinted at by Green, but too often the reader is then given a reference for further explanation.

N.K. Kaushik, J.B. Robinson and L. Chatarpaul describe a simple experiment to illustrate some aspects of nitrogen transfer in stream sediments and the role that oligochaete worms and microorganisms play in these processes. The only reference to an insect in the paper is a passing reference to the work by Edwards (1958) and Anderson (1976) showing that Chironomus riparius and C. plumosus larvae accelerate the rate of denitrification. While the experimental process outlined appears to demonstrate the nitrogen transformations clearly, since the principle organisms used are oligochaetes, I must query the inclusion of this paper in a publication on Aquatic Entomology.

S.W. Szczytko and K.W. Stewart discuss some possible uses for the stonefly drumming behaviour. Instructions are provided for obtaining live material, observing drumming, and recording signals with four possible experiments using this phenomenon outlined. Since Plecoptera exhibit seasonal emergence patterns throughout North America, representatives are usually available year round - a point of much interest to those of us who reside in Canada.

C.O. Berg describes two kinds of small aquaria that can be inserted into a standard slide projector in order to project the images of living insects and other freshwater invertebrates. He discusses the possible application of these apparatus and many of the potential problems that can arise. The fifth paper in the first group is by N.H. Anderson who describes four laboratory exercises which

expose students to the activities of aquatic insects: (1) functioning of the physical gill, using corixids or notonectids; (2) physical properties of the surface film of water, using staphylinid beetles; (3) molting; and (4) behaviour and feeding of a caddisfly larva. All four experiments are designed to be readily understood by students in a laboratory situation and to reinforce those topics presented in lectures while at the same time encouraging student initiative while examining living insects. Anderson demands that the students think out the questions and answers for themselves rather than have them answer a fixed set of predetermined questions. Altogether this is a very interesting approach.

The two primarily field exercises (White; Mackay) look at stream environments. R.S. White suggests guidelines to aid in selecting streams for aquatic entomology field trips and techniques for improving the course on a year by year basis. R.J. Mackay describes winter field work techniques and observations as well as the logistics of such operations. Many of her suggestions are of particular interest to the Canadian milieu.

The final group of five papers (Hart; McGinniss and Trush; Gottfried and Resh; Stewart; and Merritt *et al.*) present exercises combining the classroom/laboratory and field trips. D.D. Hart discusses the importance of species interactions in structuring benthic invertebrate communities, using methods suitable for undergraduate courses. He looks at various sampling methods which can be used to describe the spatial co-occurrence patterns of benthic species. Several methods for statistically analysing these patterns of species co-occurrence are then developed. Particular stress is laid on the calculation and interpretation of those tests used. M.J. McGinniss and W.J. Trush look at the species-area relationships in the lotic environment.

J. Gottfried and V.H. Resh discuss a self-instructional field module designed to introduce undergraduate students to benthic sampling, species diversity, and the use of benthic invertebrates as indicators of water quality. The module is included as an appendix to this paper and will provide a stimulus to anyone who wishes to set up a similar programme. However I found myself disagreeing with some of the "right" answers included. K.W. Stewart discusses a module for advanced field exercises again stressing student initiative in handling specific tasks and questions to provide student feedback. He deemphasizes background information, encouraging the more advanced students to research the literature. R.W. Merritt, K.W. Cummins, and J.R. Barnes describe two simple bioassay techniques used to illustrate stream watershed community processes. They make particular reference to leaf litter processing.

In summary one finds useful, thought-provoking techniques and exercises presented which the reader will either be able to use directly or after some modifications to suit local conditions.

J.C. Conroy
Department of Biology
University of Winnipeg

Neurohormonal Techniques in Insects. 1980. Edited by T.A. Miller. 282 pages. Springer-Verlag. \$US 39.80.

The Springer Series in Experimental Entomology owes much of its success to the series editor, T.A. Miller. Miller has brought together the individuals and groups who have made many of the original discoveries, worked out original methods and who are still active in the field of insect neurohormones to produce this authoritative volume. The book is not intended to be a text on insect neuroendocrinology. Rather, it is a hard-nosed, experimentalist's look at the nuts and bolts of the neurohormones themselves (a welcome change, in this reviewer's opinion) - their extraction, isolation, purification, assay and chemical characterization. A dozen or more neurohormones are dealt with, of which only two, proctolin and locust adipokinetic hormone, have known structures. The remainder are: diuretic hormone, insulin-like and glucagon-like hormones, bursicon, puparium factors (4), cuticle plasticizing factors, eclosion hormones, diapause hormones and the prothoracicotropic hormone.

Although the book is clearly aimed at the researcher, teachers of insect physiology will find it an invaluable companion in preparing their lecture notes as there is much sound and fundamental information on the neurohormones in each chapter. I think students may enjoy hearing that 100,000 brains dissected from pupae of *Bombyx* did not provide enough starting material for the isolation of the prothoracicotropic hormone, and the attempt ended in failure! But there are successes too, and the complete structure of proctolin was obtained from 180 micrograms of the substance purified from 125,000 cockroaches. Many of the techniques used in neurohormone research, such as bioassay, are described in meticulous detail and will provide valuable guidance in setting up undergraduate laboratory experiments.

There is more to come in the story of insect neurohormones. Professor Fraenkel, doyen of the insect physiologists, paints and encouraging and sympathetic picture of our progress in his Foreward and Overview of the subject. Miller and his authors have captured a moment in the history of the development of this upcoming and vigorous 'young' discipline.

Robert P. Bodnaryk
Canada Agriculture
Research Station, Winnipeg

BOOK NOTICES

Dethier, V.G. (1980). *The World of the Tent-Makers. A natural history of the eastern tent caterpillar.* 148 pp. \$12.50 cloth; \$5.95 paper. The University of Massachusetts Press, Amherst, Mass. 01002.

Biologists who are familiar with Dethier's 'To Know a Fly' will need no special invitation to seek out a copy of *Tent-Makers*. Dethier tells the natural history of the eastern tent caterpillar in the naturalist's lyrical style, carrying to the reader the author's wonder at the mysteries of the life process at every turn. Yet make no mistake about this slim volume: invisible threads of the tempered steel of modern biology - of evolution and endocrinology, of physics and physiology - weave the whole into a unique work of science and fascinating story. Pen and ink drawings by Abigail Rorer add charm and warmth to the naturalist's setting. This book is for children and professors, who alike in observation of the universe ask, why?

Robert P. Bodnaryk

Beck, S.D. 1980. *Insect Photoperiodism. Second Edition.* Academic Press. 387 pages, hard cover. U.S. \$32.50.

Since the publication of the first edition of this book in 1968, the body of experimental data on insect photoperiodism has grown enormously in volume and scope. The second edition has been revised and up-dated by the author to take into account the growth of new knowledge. As might be expected, a chapter dealing with the author's "Dual System Theory of the Biological Clock" has been included. The second edition of *Insect Photoperiodism* is the standard work in its field and likely will remain so for some time to come. Yet, as a physiologist, I found much about which to be dissatisfied in the book - particularly in the chapter dealing with the "Physiology of the Biological Clock". As Beck himself freely admits, current theories, models and derivative computer simulations must eventually be displaced by an elucidation of chemical mechanisms by which biological-time measurement is effected in real physical living systems. My dissatisfaction is not with the book itself, but with the seemingly miniscule progress that we have made in coming to grips with the chemical identity of the biological clock, "the most difficult black box" of Beck's opening Preface.

Robert P. Bodnaryk

Welch, S.M. and B.A. Croft. 1979. The Design of Biological Monitoring Systems for Pest Management. John Wiley and Sons. New York and Toronto, 76 pages, soft cover, price U.S. \$17.95.

This book presents an encompassing technique for the design and analysis of biological monitoring systems. It begins by providing a conceptual model of an operational pest management system and then focuses in turn on biological, stochastic, economic, and logistic considerations. It concludes with a synopsis of the design procedure.

A complete systems viewpoint is adopted. Mathematical modelling and probability distributions are used extensively to interrelate the diverse features of the technique. Graphical procedures are constructed which permit the rough screening of alternative designs and computer simulation methods are used to provide detailed estimates of system performance. Concrete examples, provided throughout, are based on monitoring problems in integrated control programs for mite populations in orchard agro-ecosystems.

D.G. Harcourt
Agriculture Canada
Ottawa Research Station
Ottawa, Canada
K1A 0C6

Middlekauf, W.W. and R.S. Lane. 1980. Adult and Immature Tabanidae (Diptera) of California. Bulletin of the California Insect Survey, Vol. 22. University of California Press, 2223 Fulton St., Berkeley, California. 94720. 99 pp. US \$10.50. Soft cover.

This account of the California Tabanidae represents the updating of an earlier publication by the senior author, in view of the significant contributions made to taxonomy, biology and immature stages in the past thirty years. The keys to adults are straightforward and characters used in the keys are well illustrated. Keys to immatures are provided for known genera only, but are supplemented within the text by abundant reference to the literature and by brief descriptions where data are available. Descriptions of each of the 73 species and 7 subspecies include synonymy, geographic range, distribution in California, seasonal occurrence and a general discussion on morphological features and biology.

T.D. Galloway
Department of Entomology
University of Manitoba
Winnipeg, Manitoba

DEITZ, E.L.: TUCKER, M.F. 1980. W.M. Maskell's Homoptera: species-group names and type-material. New Zealand DSIR Information Series 146, 76p. ISSN 0077-9636; ISBN 0-477-06665-8. Price: NZ \$3.00 (plus postage to countries outside N.Z. as follows: Australia and Pacific, \$1.50; North America and Asia, \$2.50; Europe, South America, Africa, and Middle East, \$3.50).

Maskell who lived in New Zealand was one of the first researchers to describe economically important Homoptera. Between 1879 and 1898 he described over 300 species, mainly Coccoidea (scale insects); several of these are well-known plant pests such as bluegum scale, citrophilous mealybug, coconut mealybug, cottony cushion scale, red wax scale, and woolly whitefly. Because Maskell became recognized as a world authority, researchers from countries outside New Zealand sent him specimens for identification and description. As a result the Maskell Collection, now held by the N.Z. Arthropod Collection at Entomology Division, DSIR, Auckland, contains irreplaceable type-specimens of 20 countries (e.g., Australia, U.S.A., China, Japan and South Africa).

Many species have subsequently been restudied, and some specimens have been retained in other collections. Therefore Dr. Deitz and Mrs. Tucker decided to document exactly the type-material holdings of the Maskell Collection in N.Z., and to document the holdings and elucidate the type status of all other Maskell type-specimens in other collections. This bulletin is the result of their painstaking research.

The species-group names in Psylloidea, Aphidoidea, Aleyrodoidea and Coccoidea are listed alphabetically by trivial name under the family to which they are at present assigned. Each entry includes a citation of the original description, type-locality, institutions holding type-material and one or more references to recent family and generic placement. Lectotype designations are given for 28 entries.

Orders for this bulletin should be sent to: Publications Officer, Science Information Division, DSIR, P.O. Box 9741, Wellington, N.Z.; or Scientific Liaison Officer, Entomology Division, DSIR, Private Bag, Auckland, N.Z. Payment should accompany orders.

Trevor K. Crosby
DSIR, Entomology Division
Auckland, N.Z.

BOOKS RECEIVED

Keenleyside, M.H.A. (1979). Diversity and Adaptation in Fish Behaviour. 208 pp.; VII-XII; 67 Figures. Springer-Verlag, New York.

The quarterly review of biology. (1980). Vol. 55, no. 1. Sex determination in reptiles by J.J. Bull; The evolution of Cladoceran life histories by M. Lynch; commentary: Wilson's ostrich egg and Morgan's omlet by A. Weinstein. Published by the State University of New York, Stony Brook. \$9.50 plus 0.75 foreign postage.

Special Subject List of Lepidoptera. A catalogue of 206 books on Lepidoptera currently supplied by E.W. Classey Ltd. (USA), 1015 Mockingbird Lane, Box 1062, San Marcos, CA 92069

Proceedings of a 1979 Symposium on "Agricultural Research and Development: Goals for 1985". (1980). Compiled by D.F. Mettrick on behalf of the Biological Council of Canada.

"Environmental Surveillance in New Brunswick 1978-1979: Effects of Spray Operation for Forest Protection Against Spruce Budworm". (1980). Compiled by I.W. Varty for the Committee for Environmental Monitoring of Forest Insect Control Operations (EMOFICO). Free copies available from Chairman, EMOFICO, Faculty of Forestry, University of New Brunswick, Box 4400, Fredericton, N.B., E3B 5A3

Kelleher, J.S. (compiler). 1979. The Canadian Agricultural Insect Pest Review (La revue Canadienne des insectes nuisibles aux cultures), vol. 57. Free copies available from J.S. Kelleher, Research Program Service, Research Branch, Agriculture Canada, Ottawa, Ontario. K1A 0C6.

Hanks, Alan (1977). Butterflies and moths on stamps. Part I. Toronto Entomologists Association Occasional Publ. #8-77. For copies write: TEA, c/o Dept. of Vertebrate Paleontology, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, Canada M5S 2C6.

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

A.N.(S.) 115

7th October, 1980.

The Commission hereby gives six months' notice of the possible use of its plenary powers in the following cases, published in Bull. Zool. Nom. Volume 37, part 3, on 25th September 1980, and would welcome comments and advice on them from interested zoologists. Correspondence should be addressed to the Secretary, International Commission on Zoological Nomenclature, c/o British Museum (Natural History), Cromwell Road, London, SW7 5BD, United Kingdom, if possible within six months of the date of publication of this notice.

- 2138 Sphinx tipuliformis Clerck, 1759 (Insecta, Lepidoptera), proposed conservation.
- 2139 Sesia andrenaeformis Laspeyres, 1801 (Insecta, Lepidoptera), proposed conservation.
- 2149 Chermes fusca Zetterstedt, 1828 (Insecta, Homoptera) a secondary homonym in Psylla Geoffroy, 1762: proposed validation.
- 2160 Lamprocabeira Inoue, 1958 (Insecta, Lepidoptera), proposed designation of type species.
- 2258 Ptinella Motschulsky, 1844, and Nephanes Thomson, 1859 (Insecta, Coleoptera), proposed conservation.
- 2283 Aphis callunae Theobald, 1915 (Insecta, Aphidoidea), proposed conservation.
- 1583 Athyreus Macleay, 1819 and Glyptus Brullé, 1835 (Insecta, Coleoptera), proposed conservation.

R.V. Melville
Secretary

RECENT DEATHS

VKOOM, Paul N., Boiestown, N.B. On July 29, 1980, age 88. Formerly with the Plant Protection Division, Agriculture Canada. Former member ESO.

RUDINSKY, Julius A. One of the pioneers in research on pheromonal control of behavior in forest insects died on August 23, 1980 in Corvallis, Oregon. He was born in Pukanec, Czechoslovakia on August 10, 1917, received his diploma in forestry from the Slovak Technical University in Bratislava, an Absolutorium in Economics from Gottingen University, and his Ph.D. from Ohio State University in Columbus. Upon graduation, he spent 2 years with the Weyerhaeuser Company, and in 1955 joined the Department of Entomology, Oregon State University as Forest Entomologist with duties in both instruction and research. In the early 1960's Julius became intrigued with the apparent olfactory responses of bark beetles to their hosts and to each other. What began as a flirtation with bark beetle communication soon blossomed into a life-long love affair and international recognition in insect behaviour. His well-funded studies, richly documented in the more than 100 papers emitting from his laboratory, reveal a complex array of positive and negative olfactory and acoustical signals which govern host-beetle and beetle-beetle interactions. Yet one of the goals he long championed, population regulation of forest insect pests through the use of synthetic pheromones, remains a task for his successors. The legacy of this compassionate, gentle man lies in the performance and leadership displayed by his many students. He is survived by his wife, Norma and six children. (He was a member of both ESC and ESA.)

W.P. Stephen
Department of Entomology
Oregon State University

ADVERTISEMENTS

FOR SALE: Insect pins: Standard black, double-coated anti-rust, stainless steel; black and stainless steel Minutens; label pins; and Karlsbader pins with brass heads. Many sizes. For prices write to Clair Armin, 191 Palm Avenue, Reedley, CA 93654, U.S.A.

LIGHT SCOPES FOR SALE: The National Panasonic Light Scope is superior in every respect to a handlens without the high cost of a dissecting microscope. The Model FF-393E is a 30-power monocular microscope with its own illumination. It gives a sharp, clear image with a focal range of ± 4 mm from the base of the viewing chamber. Price \$25.00 + \$2.00 for postage, handling and insurance. Send certified cheque or money order to Banwest Pest Management Consultants Ltd., 10844-139A Street, Surrey, B.C. V3R 3E5

EMPLOYMENT — EMPLOIS

POSITIONS AVAILABLE

ENTOMOLOGY DEPARTMENT HEAD. Applications are invited for the position of Head of the Department of Entomology, University of Manitoba with the rank of Associate Professor or Professor, effective September 1, 1981. This will be a tenure stream appointment. Applicants should have demonstrated a record of successful administration and leadership, as well as high academic and research accomplishments. Applicants should be prepared to teach and do research in one or more of the following areas: insect biosystematics, insect morphology, crop protection and integrated pest management, biting flies biology, aquatic entomology, or medical-veterinary entomology. The University encourages both women and men to apply for this position and especially invites applications from Canadian citizens, permanent residents, and others eligible for employment in Canada at the time of application. Applications will be accepted until January 31, 1981, or until a satisfactory candidate has been identified. Applications should be sent to: DEAN R.C. MCGINNIS, FACULTY OF AGRICULTURE, THE UNIVERSITY OF MANITOBA, WINNIPEG, MANITOBA, R3T 2N2, CANADA.

ENTOMOLOGIST. Position available immediately for an Agricultural Entomologist stationed in Princeton, New Jersey. Responsible for planning and coordination of field research and development programmes with agricultural insecticides in Latin America and the Far East; initiating and monitoring toxicology, metabolism and residue studies in support of registration submissions; reviewing product performance reports and proposed label texts; and, providing product technical assistance.

Applicant must have Ph.D. plus 3 to 5 years relevant field experience, or equivalent. Some knowledge of local pest problems and cultural practices desirable. Salary commensurate with training and experience. Opportunities for advancement into management for qualified candidates. Submit letter reflecting qualifications and interests with resume to:

Dr. Richard J. Nielsson*
Director, Latin America/Far East
Plant Product Research & Development
American Cyanamid Company
P.O. Box 400
Princeton, New Jersey 08540

An equal opportunity employer, male/female.
*Member of Entomological Society of America.

INSECT ECOLOGY AND PEST MANAGEMENT. Postdoctorate or seasoned Ph.D. candidate wanted to conduct studies of insect ecology and pest management on cowpeas in West Africa. For further details contact Dr. Richard B. Chalfant, Georgia Coastal Plain Experiment Station, Tifton, Georgia 31793, USA. Telephone: (912) 386-3374.

POSTDOCTORAL POSITION - INSECT PHYSIOLOGY. A postdoctoral position is available to study the reproductive physiology of male insects (tenable for one year in the first instance, renewable for a second, and possibly a third year). Salary based on NSERC rates. Ph.D. with biochemical expertise required. Send curriculum vitae and names of three referees or write for further information to Dr. Cedric Gillott, Department of Biology, University of Saskatchewan, Saskatoon, Sask., S7N 0W0

POST DOCTORAL POSITION - POPULATION BIOLOGY OF APHIDS. Available immediately. To study the genetic basis of insecticide resistance in Aphids using ecological and biochemical-genetic approaches. Preference for candidates with experience in insect ecology and taxonomy. Salary Canadian \$13,000-14,000. Appointment initially for one year with possible extension for an additional year. Send resume and two letters of recommendation to R.S. SINGH, DEPT. OF BIOLOGY, MCMASTER UNIVERSITY, HAMILTON, ONTARIO, L8S 4K1, CANADA.

OFFICERS OF AFFILIATED SOCIETIES

Entomological Society of British Columbia

President:	Dr. A.R. Forbes
President elect:	Dr. L. Safranyik
Past President:	Dr. R. Elliott
Sec-Treasurer:	Dr. Bryan D. Frazer Research Station, Agriculture Canada 6660 N.W. Marine Drive Vancouver, British Columbia V6T 1X2
Editor of Journal:	Dr. H.R. MacCarthy
Regional Director for ESC (1981-83):	Dr. B.D. Frazer

Entomological Society of Alberta 1981

President:	Mr. H.G. Philip
Vice. President:	Mr. M.G. Dolinski
Past President:	Dr. W.A. Charnetski
Secretary/Treasurer:	Mrs. M.Y. Steiner Entomology Section, Plant Sciences Alberta Environment Centre Bag 4000 Vegreville, Alberta T0B 4L0
Editor of Proceedings:	Dr. Bruce Heming
Regional Director of ESC:	Mr. J.A. Shemanchuk

Entomological Society of Ontario

President:	Dr. Susan B. McIver
President elect:	Dr. Rudolph Harmsen
Secretary:	Dr. M.K. Sears Department of Environmental Biology, University of Guelph Guelph, Ontario N1G 2W1
Treasurer:	Dr. G.A. Surgeoner/Wendy Ralley
Editor of Proceedings:	Dr. C.R. Ellis
Regional Director to ESC:	Dr. R. Harmsen

ENTOMOLOGISTS AVAILABLE

ENTOMOLOGISTES DISPONIBLES

The Employment Committee of the Entomological Society of Canada has published a 1980 booklet containing the resumés of members who are looking for employment. A copy of this booklet has been sent to all present employers of entomologists in Canada, including Agriculture Canada and Environment Canada research stations, as well as the chairmen of all university biology departments. If you do not have access to this publication, a copy may be obtained from:

The Chairman
Employment Committee (Entomological Society of Canada)
Department of Environmental Biology
University of Guelph
Guelph, Ontario
N1G 2W1

Le Comité de l'Emploi de la S.E.C. a publié un 1980 livret contenant les C.V. des membres à la recherche d'un emploi. Une copie de cette publication a été envoyée à tous les employeurs d'entomologistes au Canada, y inclus Agriculture Canada et Environnement Canada, ainsi qu'aux directeurs des départements des Biologie. Si vous n'avez pas accès à cette publication, vous pouvez en obtenir une copie à l'adresse ci-dessus.



The 1980-81 ESC Board from left to right: R.D. McMillen, P.W. Riegert, E.C. Becker, G.E. Ball, G.B. Wiggins, J.A. Shumanohuk, S.R. Loschiavo (President), W.J. Turnock, R.H. Storch, W.G. Friend, P.P. Harper, M.D. Proverbs, P.-P. Benoit, J.E. Laing (Treasurer). Absent: R.H. Burrage, D.M. Davies, D.C. Eidt, B.D. Fraser, T.D. Galloway, R. Harmsen, J.D. Shorthouse.

SCHOLARSHIP OPEN TO CANADIAN UNDERGRADUATES

ENTOMOLOGICAL SOCIETY OF AMERICA
\$1,000 UNDERGRADUATE SCHOLARSHIP
sponsored by BioQuip Products

To be awarded annually beginning with the 1980-81 school year

Qualifications: Applicants must be undergraduate student members of ESA* or studying entomology at the undergraduate level at a recognized college or university in the U.S., Canada, or Mexico.

Please submit the following:

1. Certification by the registrar or similar school official of undergraduate student status.
2. Certification by school or other knowledgeable official attesting to student's need for financial assistance.
3. Transcript of college grades.
4. Two (2) written statements from a school official and any other qualified individual attesting to the student's character and qualifications.
5. Statement from the student concerning career goals, interest in entomology, and other factors which illustrate qualifications for the scholarship.

Send the above materials to the Entomological Society of America, 4603 Calvert Road, College Park, Maryland 20740, before June 15, 1981.

*Applications for student membership are available from your entomology department head or from the Society at the above address.

PRINTED LABELS FOR ENTOMOLOGISTS: Exceptionally high quality printed labels are available for prices as low as \$2.25 per thousand. Labels are typeset in 4 point type (not photoreduced from typewritten copy), are printed in special black ink on 110 lb. white card stock, and are available with quick deliveries. Supported by the Lepidoptera Research Foundation which receives 20% of the purchase price of the labels. Write for brochure with complete prices to Bio-Publication Services, 25711 North Vista Fairways Drive, Valencia, CA 91355, U.S.A.

LIST OF CHAIRMEN AND MEMBERS OF ESC COMMITTEES

1980-81

<i>Annual Meeting</i>	J.A. Shemanchuk (c) R. Harmsen P.W. Reigert	Lethbridge Kingston Regina
<i>Elections</i>	P.A. MacKay (c) P.W. Arntfield T.D. Galloway	Winnipeg Winnipeg Winnipeg
<i>Employment</i>	D.J. Madder (co. c) R.S. MacDonald (co. c)	Guelph Guelph
<i>Fellowship Selection</i>	M.E. MacGillivray (c) (1982) F.T. Bird (1981) R.A. Brust (1983) G.S. Cooper (1981) H.F. Madsen (1982) W.G. Wellington (1983)	Fredericton Sault Ste. Marie Winnipeg Mississauga Summerland Vancouver
<i>Achievement Awards</i>	G.P. Wiggins (c)	Toronto
<i>Finance</i>	Ian Lindsay (c) J.M. Campbell D.J. Harcourt D.C. Herne E.G. Munroe	Ottawa Ottawa Ottawa Vineland Ottawa
<i>Heritage</i>	P.W. Reigert (c)	Regina
<i>Insect Common Names and Insect Cultures</i>	W.Y. Watson (c) J.S. Kelleher	Waterloo Ottawa
<i>Nominations</i>	W.J. Turnock (c) A.G. Robinson D. Rosenberg	Winnipeg Winnipeg Winnipeg
<i>Membership</i>	W.G. Friend (c) J.C. Conroy J.A. George H.J. Herbert H.F. Madsen J.C. Tourneur J. Weintraub	Toronto Winnipeg London Kentville Summerland Montreal Lethbridge
<i>Publications</i>	R.P. Bodnaryk (c) C. Cloutier R.J. Lamb	Winnipeg Quebec Winnipeg
<i>Public Education Committee</i>	J.D. Shorthouse (c) B.D. Frazer (ESBC) J.A. Shemanchuk (ES Alta) P.W. Riegert (ES Sask) T.D. Galloway (ES Man) R. Harmsen (ES Ont) P.P. Harper (SE Que) R.H. Storch (Acadian ES)	Sudbury Vancouver Lethbridge Regina Winnipeg Kingston Montreal Orono, Me
<i>Scholarships</i>	R.F. Morris (c) J.P. Bourassa B.S. Heming E.F. Johnson J.G. Pilon W.B. Preston A.D. Tomlin	St. John's Trois-Rivières Edmonton Stoney Creek Montreal Winnipeg London

Science Policy

G.E. Ball (c)	Edmonton
S.B. Hill (SCITEC)	Montreal
N.J. Holliday	Winnipeg
F.L. McEwen (BCC)	Guelph
J.N. McNeil	Quebec
J.D. Shorthouse	Sudbury
A.W. Thomas	Fredericton
G.B. Wiggins	Toronto

*Scientific Committee,
Biological Survey of
Canada (Terrestrial
Arthropods)*

J.A. Downes (c) (1981)	Ottawa
I.M. Smith (v-c) (1981)	Ottawa
E.L. Bousfield (1981)	Ottawa
M.H. Colbo (1982)	St. John's
A. Francouer (1981)	Chicoutimi
K.G. Davey (1981)	Downsview
D.K. McE. Kevan (1983)	Ste. Anne de Bellevue
V.G. Marshall (1981)	Victoria
J.V. Matthews, Jr. (1983)	Ottawa
R.D. McMullen (1982)	Ottawa
S.B. Peck (1982)	Ottawa
G. Pritchard (1982)	Calgary
D.M. Rosenberg (1982)	Winnipeg
G.G.E. Scudder (1983)	Vancouver
(vacancy) (1983)	

Representing National Museum of Natural Sciences:

L. Lemieux, Director
D.E. McAllister

Representing Biosystematics Research Institute:

G.A. Mulligan, Director
I.M. Smith

Representing Entomological Society of Canada:

S.R. Loschiavo, President

*By-Laws, Rules and
Regulations*

G.H. Gerber (c)	Winnipeg
R.A. Brust	Winnipeg
H.G. Wylie	Winnipeg

REPRESENTATIVES:

*Biological Council
of Canada*

F.L. McEwen	Guelph
D.E. Bright	Ottawa
S.R. Loschiavo	Winnipeg

*Canadian Committee of
the International
Association on Water
Pollution Research*

J.F. Flannagan	Winnipeg
----------------	----------

*CSA Committee on
Common Names for Pest
Control Chemicals*

P.W. McMullen	Unionville
---------------	------------

SCITEC

S.B. Hill	Ste. Anne de Bellevue
-----------	-----------------------