
ENTOMOLOGICAL SOCIETY OF CANADA

Bulletin



SOCIÉTÉ ENTOMOLOGIQUE DU CANADA

Vol. 12

March-mars 1980

NO. 1



Entomological Society of Canada
Société Entomologique du Canada

Bulletin

Vol. 12, No. 1, March — mars, 1980

Editorial	1
Members of ESC Finance Committee	1
ESC Postgraduate Award - Bourse de la SEC	1-4
Notice of meeting	4
Nominations for the 1980 ballot	4-5
BCC activities (CCB activité)	5-6
Scientific Committee for the Biological Survey Project	6-7
Annual meeting-1980 - Réunion annuelle	8
Special Interest Groups - Groupes d'Interet Particulier	9
Tenth Annual Insect Photo Salon	9-11
Retirement of Ralph Strang Downing	12
ESC 1980 Postgraduate Award to Patricia W. Shefter	13
Travel fund limit removed for NSERC grants	13
Book reviews	13-16
Book notices	16-19
Books received	20
Working groups of CANUSA (East) meeting	20
Meeting announcement - Iowa State University	21
Insect exchanges	21
Employment - Positions available	21-22
Recent deaths	22

D.M. Davies

Bulletin Editor

Cover Design: M.A. Sydor

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

EDITORIAL

It appears that the annual cost for publishing the Bulletin can be halved with a minimum of change in format. It has been decided to produce the March, June and September Bulletins on cheaper paper by camera-ready copy, but to retain the same shaped journal, and front cover design. The Bulletin editor would appreciate any comments on this issue of the Bulletin so that any needed changes can be made in subsequent numbers.

Please send in publishable news items: news of members, (honours, transfers, retirements, deaths), upcoming meetings, projects of Canada-wide appeal, humorous anecdotes, items of historical interest.

MEMBERS OF ESC FINANCE COMMITTEE

J. M. Campbell, Agriculture Canada, Ottawa
D. C. Harcourt, Agriculture Canada, Ottawa
D.H.C. Herne, Agriculture Canada, Vineland
I.S. Lindsay, Defence Research, Ottawa (Chairman)
E.G. Munroe, Retired, Ottawa

ANNOUNCEMENT

ENTOMOLOGICAL SOCIETY OF CANADA POSTGRADUATE AWARD

1980

The Entomological Society of Canada will offer a postgraduate award to assist a student in undertaking his or her first year of graduate study and research leading to an advanced degree in entomology. The award will be made to a man or woman on equal terms on the basis of high scholastic achievement.

The purpose of this announcement is to outline the eligibility requirements, the method of application and the regulations governing the use of the award.

All communications regarding the award should be addressed to:

Dr. J.E. Laing, Secretary
Department of Environmental Biology
University of Guelph
Guelph, Ontario N1G 2W1

POSTGRADUATE AWARD

A Postgraduate Award valued at \$500.00 for 12 months will be awarded for a first year of postgraduate study and research in entomology in Canada.

Eligibility

The successful candidate must be either a Canadian citizen, or landed immigrant with a baccalaureate from a Canadian university. The award is conditional until the recipient has provided evidence that he, or she, has been accepted by a graduate school to engage, during the 1980-81 academic year, in a program of study and research for an advanced degree with full graduate student

status. Failure to provide this evidence will result in cancellation of the award. Before the scholar may receive his or her award a statement must be provided by the Dean of Graduate Studies at the university of tenure certifying that the student has been accepted for graduate studies and research with the full status of a graduate student. A scholar who enters a graduate school as a qualifying candidate is not eligible to hold the Postgraduate Award of the E.S.C. The award to a student who was unable to gain admission to a graduate school as a fully qualified student will be cancelled.

Tenure

The Entomological Society of Canada Postgraduate Award is granted for tenure in Canada. A successful candidate may carry out his or her postgraduate research at the Canadian university of his or her choice. Tenure may commence on or after May 1980 but not later than the date on which the academic year begins.

Method of Application

The Entomological Society of Canada Postgraduate Award will be announced before 1 October 1980. Candidates should submit a properly completed form, with supporting documents in accordance with the instructions printed on the application form. Applications must be received by the Secretary of the Society not later than 15 June 1980.

REGULATIONS

Demonstrating and Instructing

The Award holder is permitted under normal circumstances to demonstrate or instruct for a maximum of 200 hours per annum, provided that the Head of his or her department considers it desirable and that it does not hinder the progress of his or her work. The Award holder may accept remuneration for such work at the rate in effect at the university concerned.

Emolument from Other Sources

Apart from demonstrating and holidays, an award holder will devote his or her whole time to study and research and will not undertake any paid work, but he or she may hold another award or scholarship.

Transfers

After the postgraduate award is made, any change in the course of study or in the university of tenure requires prior approval of the Entomological Society of Canada Scholarship Committee. A request for permission to transfer must be supported by statements from each Head of department concerned.

The Award is made on condition that the winner engage in a program of graduate studies and research for an advanced degree in Entomology. Students who, after receiving the Award decide to transfer to a graduate program other than entomological cease to be eligible and their award will be cancelled.

Absence Through Illness

If, on account of illness, an Award holder is absent continuously for more than two weeks, the Scholarship Committee of the Society should be notified.

Payment of the Award

The Award will be paid in January 1981 on receipt of a report of satisfactory progress from the supervisor.

Additional Allowances

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

AVIS

Bourse de la Société Entomologique du Canada aux étudiants post gradués — 1980

La Société Entomologique du Canada offrira une bourse aux étudiants en première année d'études post-graduées en préparation d'un diplôme supérieur en entomologie. La bourse sera accordée à un étudiant ou une étudiante en raison des seuls critères de réussite académique.

Le but de la présente est de préciser les conditions d'éligibilité, le processus de demande et les exigences rattachées à cette bourse.

Toute correspondance relative à la bourse doit être adressée à.

Dr. J.E. Laing, Secrétaire
Department of Environmental Biology
University of Guelph
Guelph, Ontario N1G 2W1

Bourse d'études post-graduées

Une bourse d'études post-graduées d'un montant de \$500.00 sera accordée pour 12 mois à un étudiant en première année de travaux de recherches entomologiques au Canada.

Éligibilité

Le candidat choisi doit être un citoyen canadien ou un résident reconnu du Canada avec un baccalauréat d'une université canadienne. La bourse ne sera accordée que lorsque le candidat aura soumis un dossier démontrant qu'il est enregistré aux études supérieures pour l'année académique 1980-81, et que son programme établi en vue d'un diplôme supérieur donne tous les privilèges rattachés au statut d'étudiant post-gradué. A défaut de ce dossier, la bourse sera annulée. Avant de recevoir sa bourse, le Doyen de l'Ecole des Etudes Supérieures aura soumis par écrit un témoignage d'authenticité du programme d'études et de statut de l'étudiant. Un étudiant qui s'inscrit en vue de compléter l'obtention de crédits ne peut pas faire une demande pour la bourse de la S.E.C. Si la bourse était accordée à un candidat qui n'aura pu obtenir son admission à une Ecole de Gradués, celle-ci sera annulée.

Endroit

La bourse ne peut être obtenue qu'au Canada. Le candidat pourra s'inscrire à l'université de son choix. La bourse prendra effet en Mai 1980 ou plus tard sans excéder la date du début de l'année académique.

Formalités de la demande

La bourse sera annoncée avant le 1^{er} octobre, 1980. Les candidats devront soumettre leur candidature à l'aide du formulaire approprié et y ajouter tous les documents requis sur la formule de demande. Les demandes devront être reçues par le Secrétaire de la Société au plus tard le 15 juin, 1980.

RÈGLEMENTS

Démonstration et cours

Le boursier pourra dans de circonstances normales donner des séances de cours ou de démonstration jusqu'à un maximum de 200 heures par année pourvu que le chef de son département en exprime le désir et considère que ces tâches additionnelles n'iront pas à l'encontre du progrès de l'étudiant. Le boursier peut accepter une rémunération au taux normal à l'université où il se trouve.

Autres sources de revenus

Sauf pour fins de démonstration et les jours de congé, le boursier devra consacrer tout son temps à l'étude et à ses recherches et n'accepter aucune autre rémunération, mais pourra jouir d'une autre bourse ou d'un prix.

Transferts

Après acceptation de la bourse, tout changement dans le programme d'études ou déplacement vers une autre université devra recevoir au préalable l'approbation du Comité de la Bourse de la S.E.C. Une telle demande doit être accompagnée de documents provenant des deux Chefs de départements concernés.

La Bourse est accordée pour poursuivre des études du 2^e ou 3^e cycle conduisant à l'obtention d'un grade en entomologie. Les récipiendaires de la Bourse qui décideront de changer d'orientation pour d'autres disciplines que l'entomologie deviendront inéligibles et se verront retirer leur bourse.

Absence pour maladie

Si, pour des raisons de maladie, un Boursier s'absente pour plus de deux semaines, il doit en informer le Comité de Sélection de la Société.

Paiement de la Bourse

Le paiement de la bourse se fera au cours de Janvier 1981 sur réception d'un rapport satisfaisant du professeur du boursier.

Frais supplémentaires

La Bourse consiste en un montant total. Il n'y a pas d'autres formes de prix accordés par la Société. Des frais supplémentaires pour assister, par exemple, aux réunions scientifiques, ou pour frais de cours, publications, etc., ne sont autorisés pour aucune raison.

NOTICE OF MEETING

The 1980 Annual Business Meeting of the Entomological Society of Canada will be held on Tuesday, 7 October at the Chateau Frontenac, Quebec City, P.Q.

Matters for consideration of this meeting or of the Governing Board meeting to be held 4 and 5 October 1980 in Quebec City, should be sent to the Secretary, Professor J.E. Laing, Department of Environmental Biology, University of Guelph, Guelph, Ontario N1G 2W1.

NOMINATIONS FOR THE 1980 BALLOT

Second Vice-President: G. E. Ball
 Department of Entomology
 University of Alberta
 Edmonton, Alberta T6G 2E3

A.J. McGinnis
Research Branch
Research Station
Agriculture Canada
Box 185
Vineland Station, Ontario NOR 2E0

Directors-at-Large:

P. Benoit
Laurentian Forest Research Centre
Environment Canada
P.O. Box 3800
1808 Route du Vallon
Ste. Foy, P.Q. G1V 4C7

R. D. McMullen
Research Station
Agriculture Canada
Summerland, British Columbia V0H 1Z0

J. G. Pilon
Department of Biological Sciences
University of Montreal
Montreal, P.Q. H3C 3J7

Fellowship Selection
Committee:

R. A. Brust
Department of Entomology
University of Manitoba
Winnipeg, Manitoba R3T 2N2

H.H.J. Nesbitt
Biology Department
Carleton University
390 Tory Building
Colonel By Drive
Ottawa, Ontario K1S 5B6

Dr. W. G. Wellington
Institute of Animal Resource Ecology
University of British Columbia
2075 Wesbrook Mall
Vancouver, British Columbia V6T 1W5

Additional nominations from the membership must be submitted not later than March 31, 1980 to the Secretary, Dr. J.E. Laing, Department of Environmental

B.C.C. ACTIVITIES

The B.C.C. has recently taken two initiatives to encourage support for agricultural research in Canada. On 2 November 1979, an Invitational Symposium on "Agricultural Research and Development - Goals for 1985" was held in London, Ontario. Discussants from agricultural faculties, governmental agencies, business and industry presented their views on the type of contribution to the agricultural goals in R & D that can be made by each sector, the ways to improve cooperation and coordination between the sectors and the economic benefits to the consumer that would result from increased government support for agricultural R & D, to 70 invited participants. The Hon. John Wise, Minister of Agriculture, presented a keynote dinner speech.

B.C.C. has continued to press the federal government to establish an "Agricultural Research Council of Canada". The summary of the written proposal to the Hon. John Wise follows:

Agriculture in Canada is a major industry providing over 60 per cent of the food consumed by Canadians and contributing significantly to the nation's balance of trade through the export of agricultural commodities.

In spite of the importance of the agricultural industry to Canada, research and development expenditures applied to new technologies in agriculture falls far short of that required to maintain a viable, healthy industry. It is therefore essential to enhance and stimulate the research potential of Canadian universities in the agricultural field.

The arguments presented by the federal government to justify the complete separation of responsibility for funding university research programmes from the operation of the Research Laboratories of the National Research Council apply equally strongly to Agriculture Canada, and the separation of its university research support programmes from those of the Research Branch.

In proposing an independent Agriculture Research Council of Canada to take over responsibility for supporting university-based research in the Agricultural Sciences, we envisage five grant review committees, namely, Crop Science and Horticulture, Animal and Veterinary Science, Agricultural Economics, Agricultural Engineering, and Graduate Scholarships and Fellowships, reporting to the Council through a Grants and Scholarships Committee. Minimum initial funding of \$25 million for the new Council is recommended.

The Council itself would be made up of a President and 20 members, selected from the university, industrial and public sectors, appointed by the Governor-in-Council and reporting to Parliament through the Minister of Agriculture.

The establishment of an Agricultural Research Council of Canada would both complete the circle of Research Councils involved in supporting research in Canadian universities, and also ensure the integration of research and development activities in the agricultural sciences, which is an essential prerequisite to developing a sound agricultural industry in Canada.

SCIENTIFIC COMMITTEE FOR THE BIOLOGICAL SURVEY PROJECT

The next meeting of the Scientific Committee for the Biological Survey Project will take place on March 13-14, 1980, in Ottawa. Present Committee membership reflects retirement of some members by rotation, and the appointment of replacements. Drs. Rosenberg and Smith (retiring 1979) were reappointed. New members are Drs. Colbo, McMullen, Peck and Pritchard. The committee is now composed as follows:

Dr. E.L. Bousfield
National Museum of Natural Sciences
Ottawa, Ontario K1A 0M8

Dr. Murray H. Colbo
Research Institute on Vector Pathology
Memorial University of Newfoundland
St. John's, Newfoundland A1C 5S7

Dr. K. G. Davey
Department of Biology
York University
4700 Keele Street
Downsview, Ontario
M3J 1P3

Mr. J.A. Downes (Chairman)
Biosystematic Research Institute
Agriculture Canada
Ottawa, Ontario K1A 0C6

Dr. André Francoeur
Département des Sciences Pures
Université du Québec à Chicoutimi
930 est, rue Jacques-Cartier
Chicoutimi, Québec G7H 2B1

Dr. D.K. McE. Kevan
P.O. Box 268
Macdonald Campus of McGill University
Ste. Anne de Bellevue, Quebec H9X 1C0

Dr. V.G. Marshall
Pacific Forest Research Centre
Environment Canada
506 West Burnside Road
Victoria, British Columbia V8Z 1M5

Dr. J.V. Matthews, Jr.
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario K1A 0E8

Dr. R.D. McMullen
Research Station
Agriculture Canada
Summerland, British Columbia VOH 1Z0

Dr. Stuart B. Peck
Department of Biology
Carleton University
Ottawa, Ontario K1S 5B6

Dr. Gordon Pritchard
Department of Biology
University of Calgary
Calgary, Alberta T2N 1N4

Dr. D.M. Rosenberg
Fisheries and Oceans Canada
Freshwater Institute
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Dr. G.G.E. Scudder
Department of Zoology
University of British Columbia
2354-6270 University Blvd
University Campus
Vancouver, British Columbia V6T 2A9

Dr. I.M. Smith
Biosystematics Research Institute
Agriculture Canada
Ottawa, Ontario K1A 0C6

Dr. Glenn B. Wiggins
Royal Ontario Museum and
University of Toronto
100 Queen's Park
Toronto, Ontario M5S 2C6

The President of the Entomological Society of Canada (Dr. W.J. Turnock) is also a member (ex officio) of the Committee.

ANNUAL MEETING REUNION ANNUELLE

SOCIÉTÉ ENTOMOLOGIQUE DU QUÉBEC
ENTOMOLOGICAL SOCIETY OF CANADA

October 5-8, octobre, 1980
CHATEAU FRONTENAC
Quebec, P.Q.

- October 5 octobre: - Registration - Inscription
- October 5 octobre: - Opening Ceremonies - Ouverture officielle
- Gold Medal - médaille d'or
- C. Gordon Hewitt Award - Prix C. Gordon Hewitt
- Symposium: Winter Survival Strategies
Stratégies de survie hivernale
- Réunion générale de la S.E.Q.
- Reception at Laval University
- Réception à l'Université Laval
- October 7 octobre: - Special Interest Groups
Groupes d'intérêt particulier
- E.S.C. annual business meeting
Réunion générale de la S.E.C.
- Banquet
- October 8 octobre: - Submitted papers - communications scientifiques

Information: Dr. J. McNeil, Chairman
Département de biologie
Université Laval
Québec, P.Q.
G1K 7P4

SPECIAL INTEREST GROUPS GROUPES D'INTERET PARTICULIER

The following subjects have tentatively been chosen for the special interest groups. - Les sujets suivants ont été choisis provisoirement.

- I - Biological control in Canada - Lutte biologique au Canada
- II - Aphid biology and ecology - Biologie et écologie des pucerons
- III - Biting flies - Mouches piqueuses
- IV - Biology and ecology of aquatic insects
Biologie et écologie des insectes aquatiques
- V - Insect physiology - Physiologie des insectes
- VI - Plant - insect interactions
Interactions plantes - insectes

We anticipate four or five invited speakers in each session followed by an open discussion during which time participants will have the opportunity to present personal data (slide and overhead projectors will be available). If you have any comments or suggestions relating to the above program, please send them to Dr. J. McNeil, Département de biologie, Université Laval, Québec, P.Q. G1K 7P4 before 31 May 1980 so that your ideas may be taken into consideration.

Nous prévoyons quatre ou cinq conférenciers invités pour chaque session, suivis d'une discussion ouverte durant laquelle tous les participants pourront présenter leurs propres données (projecteur à diapositives et retro-projecteur seront disponibles). Si vous avez des commentaires ou des suggestions à faire concernant le programme ci-dessus, veuillez les faire parvenir au Dr. J. McNeil, Département de biologie, Université Laval, Québec, P.Q. G1K 7P4 avant le 31 mai 1980 afin qu'elles puissent être prises en considération.

TENTH ANNUAL INSECT PHOTO SALON ENTOMOLOGICAL SOCIETY OF CANADA

QUEBEC, P.Q., 6-8 OCTOBER 1980

All nature photographers are invited to submit prints and slides of insects, related arthropods, insect damage, nests, tracks etc. for exhibit at the annual meeting.

Winners in each category will receive award certificates, ribbons and a small cash award.

This salon is conducted in accordance with international standards set forth by the Photographic Society of America.

CONDITIONS OF ENTRY:

1. This salon is restricted to nature photography (insect photography in particular) which is here defined as the use of photographic process to depict all observations of facts and phenomena from entomology, in this case, in such fashion that a well-informed person will be able to identify the subject material and to certify to its honest presentation. Human elements, if present, should be unobtrusive and enhance the nature story. Photographs

which depict artificially produced hybrid plants or animals, or horticultural varieties of plants may not be used. Photographs depicting still-life studies, obviously set flower arrangements, mounted specimens, museum exhibits or groups, derivations or any form of photographic manipulation that alters truth or the photographic statement are INELIGIBLE AND SHOULD NOT BE SUBMITTED. (EXCEPTION: detailed micro or macro photographs). Descriptive titles are recommended for nature pictures and are especially helpful when titles are to be read. Cute titles should not be used.

2. The competition is open to all photographers.
3. There will be two sections: a) slides; b) prints (including colour and black and white).
4. Entries must not exceed four photos per section.
5. All prints must be mounted on cards no larger than 16" x 20". All prints must be entirely the work of the exhibitor, mounting excepted.
6. Sender's name and address should be on the reverse side of all photos.
7. Entries must be packed so that the container may be used for return, and MUST BE ACCOMPANIED BY FOUR RETURN ADDRESS LABELS AND A COMPLETED ENTRY FORM. All submissions should be sent to Dr. C. Cloutier, Département de biologie, Université Laval, Québec, P.Q. G1K 7P4 before 31 August 1980. Entries received without the appropriate fee will not be judged or returned.
8. Entry forms may be obtained from Dr. W.B. Preston, Manitoba Museum of Man and Nature, 190 Rupert Avenue, Winnipeg, Manitoba, R3B 0N2.
9. Entry fee is \$3.00 for the slide section and \$4.00 for the print section, cheques to be made out to the Entomological Society of Canada (Photo Salon).
10. Judging will begin September 15th, 1980 or as soon as possible thereafter. The definite selection of judges is presently underway.
11. Notification cards will be mailed within 10 days of completion of judging and rejected entries returned at this time. All other entries will be returned within 14 days of the end of the public showing. Catalogs will be mailed by November 1, 1980.
12. Public showing will be during the joint meeting of the Société entomologique du Québec and the Entomological Society of Canada, Chateau Frontenac, Québec, P.Q. 6-8 October 1980.
13. All entries will receive every possible care but neither the Entomological Society of Canada, la Société Entomologique du Québec nor the Insect Photo Salon Committee will be responsible for loss or damage.

**DIXIÈME PHOTOSALON ANNUEL D'INSECTES
SOCIÉTÉ ENTOMOLOGIQUE DU CANADA**

QUÉBEC, QUE. 6-8 OCTOBRE 1980

Tous les photographes intéressés à la nature sont invités à soumettre des imprimés et des diapositives d'insectes ou d'arthropodes apparentés, de dommages causés par les insectes, ou de tout aspect de la vie des insectes, pour être exposées lors de la réunion annuelle conjointe de la Société Entomologique du Canada et de la Société Entomologique du Québec.

Les gagnants dans chaque catégorie recevront certificats et rubans, en plus d'une légère récompense en argent.

Ce concours est organisé en accord avec les exigences internationales établies par la Photographic Society of America.

CONDITIONS DE PARTICIPATION:

1. Cette compétition est réservée à la photographie naturelle (en particulier des insectes), étant ici définie comme l'utilisation de la technique photographique pour illustrer l'observation de faits et de phénomènes de nature entomologique, en en particulier ici, de telle façon que toute personne compétente puisse identifier le sujet et attester de l'authenticité de la représentation qui en est faite. Tout élément humain présent devra être discret et ajouté à la signification du phénomène naturel représenté. Les photographies montrant des hybrides de plantes ou d'animaux obtenus artificiellement, ou des variétés horticoles de plantes, ne seront pas acceptées. Les photographies représentant des études de nature-mortes, des ensembles floraux hostensiblement arrangés, des spécimens épinglés, des montages ou ensembles muséologiques, des arrangements ou toute forme de manipulation de nature à modifier la réalité ou la représentation photographique pure et simple SONT INELICIBLES ET NE DOIVENT PAS ETRE SOUMISES. (EXCEPTIONS: micro et macrophotographies détaillées). Toutes les photographies naturelles doivent être accompagnées d'un titre descriptif, ce qui est très utile si des titres doivent être lus. Les titres à caractère fantaisiste doivent être évités.
2. Le concours est ouvert à tous les photographes.
3. Deux catégories de soumissions seront considérées: a) diapositives; b) imprimés (couleur et noir et blanc).
4. Le nombre maximum de soumissions par participant est de 4 par catégorie.
5. Les imprimés devront être montés sur carton n'excédant pas 16" x 20". Les imprimés doivent avoir été entièrement réalisés par le participant, à l'exception du montage.
6. Le nom et l'adresse du participant doivent figurer à l'endos de toutes les photographies soumisses.
7. Les soumissions doivent être expédiées dans un contenant réutilisable pour le retour par courrier, et doivent être accompagnées de 4 étiquettes préadressées en plus du formulaire de participation dûment rempli. Les soumissions doivent être envoyées au Dr. C. Cloutier, Département de biologie, Université Laval, Québec, P.Q. G1K 7P4, avant le 31 août 1980. Les soumissions non accompagnées des droits de participation exigibles ne seront ni jugées, ni retournées.
8. Les formulaires de participation peuvent être obtenus en s'adressant au Dr. W.B. Preston, Manitoba Museum of Man and Nature, 190 Rupert Avenue, Winnipeg, Manitoba R3B 0N2.
9. Les droits de participations sont de \$3.00 pour la catégorie diapositives et de \$4.00 pour la catégorie imprimés. Les chèques doivent être faits à l'ordre de LA SOCIÉTÉ ENTOMOLOGIQUE DU CANADA (PHOTOSALON).
10. Le jugement des soumissions débutera le 15 septembre 1980 ou aussitôt que possible après cette date, et les juges seront choisis sous peu.
11. Des avis seront expédiés dans les 10 jours suivant la fin du jugement et les soumissions rejetées seront retournées à ce moment. Toutes les autres soumissions seront retournées dans les 14 jours suivant la fin de l'exposition publique. Les catalogues seront expédiés le 1er novembre 1980.
12. L'exposition publique des soumissions gagnantes aura lieu à la réunion conjointe de la Société Entomologique du Canada et de la Société Entomologique du Québec au Château Frontenac, Québec, P.Q. du 6 au 8 octobre 1980.
13. Les soumissions recevront toute l'attention et les soins possible de la part des responsables du concours, cependant la Société Entomologique du Canada, la Société Entomologique du Québec et le Comité du Photosalon ne seront responsables d'aucun dommage ou perte qui pourraient survenir.

RETIREMENT OF RALPH STRANG DOWNING



Ralph Downing retired from his position as Entomologist at the Summerland Research Station on December 30, 1979. Born in Vernon, B.C., October 16, 1920, Ralph attended elementary and high school in that town. In 1941, he enlisted in the R.C.A.F. and served four years during World War II with Squadron 184, piloting Hurricanes and Typhoons in Britain and Europe. In the fall of 1945, Ralph entered U.B.C. and completed his B.A. degree in May 1949. In the summers of 1946 through 1948, he worked as a summer student assistant under Dr. Jimmy Marshall at the Dominion Entomology Laboratory, Summerland. During this period the Dominion Entomology Laboratory was a ramshackle two-story wooden frame

store on the lakeshore in Lower Summerland. His starting wage was a magnificent 55 cents per hour.

In April 1949, Ralph was appointed as an Agricultural Research Officer, Entomology, in the newly formed Science Service Division of the Canada Department of Agriculture. At this time, the Entomology Laboratory was moved to more spacious and solid quarters on lakeshore property adjacent to the Summerland Experimental Farm. In 1952, Ralph took advantage of educational leave of absence to attend Oregon State University where he obtained an M.S. degree in Entomology in 1953. Ralph is best known for his work on the development and implementation of integrated mite control in British Columbia apple orchards. This concept and procedure has saved Okanagan Valley apple growers tens of thousands of dollars per annum in spray costs.

Apart from his very productive entomology career, Ralph and wife Kathleen (Betty) also produced six children, five girls and one boy. They also established a Shangri-la on Anstey Arm of Shuswap Lake, northeast of Sicamous, B.C., which, until only very recently, could be reached only by boat. Ralph's retirement plans include making this summer cottage habitable the year-round where he will enjoy hunting, fishing, and the outdoor life in style.



Patricia W. Shefter receiving one of the two Entomological Society of Canada Post-Graduate Scholarship Awards for 1980 from Dr. Glenn Wiggins, Second Vice-President of the Society. An M.Sc. student at the University of Toronto, Ms. Schefter is undertaking research in systematics of the trichopteran genus *Hydropsyche*, a group of aquatic insects of major importance in running water ecosystems.

TRAVEL FUND LIMIT REMOVED FOR NSERC GRANTS

Dr. T.R. Ingraham, Director (Programs) for NSERC informed Dr. W.J. Turnock, President of E.S.C., that, "as of 1 April, 1980, the former limit on expenditures for travel to conferences of 5% of the operating grant has been removed. Thus, researchers now have added flexibility to use their funds for such travel, if they deem it an important priority in their research activities." This may facilitate some researchers in attending the International Congress of Entomology in Japan this summer.

BOOK REVIEWS

Wood, C.M., Dang, P.T. and R.A. Ellis. *The Mosquitoes of Canada*. Diptera: Culicidae. In: *The Insects and Arachnids of Canada*. Part 6. Biosystematics Research Institute, Ottawa. Publication 1686. Canadian Government Publishing Centre, Supply and Services Canada, Hull, Quebec, Canada K1A 0S9. Softbound. Price: \$8.00 in Canada, \$9.60 elsewhere.

The Mosquitoes of Canada, the 6th in a series of handbooks sponsored by Agriculture Canada, provides a welcomed synopsis and series of keys to distinguish our native species of mosquitoes (74 are described). The format follows basically that of the previous volumes, but additional features have contributed much to making it a prototype for future volumes. Most impressive are the 238 half-tone and line figures, accompanying and distinguishing (with arrows) key characteristics of the couplets, plus the 75 full-page half-tone plates (one for almost every species) included in species descriptions.

The first 50 pages are devoted to general information and include a good account of life cycles, a classification of overwintering species, a brief account of pest and vector species, adult feeding (actually blood meal requirements),

phenology, and methods for collecting, rearing, and preserving. A readily interpretable table of geographic distribution (province or territory) by species provides quick reference although locality maps for each species are also included later with species descriptions. The table does not record presence of Aedes implicatus on Prince Edward Island, thus conveying less information than the locality map. Therefore, readers are encouraged to check both maps and the table to ensure obtaining complete information about geographic distribution. To assess the completeness of the table, I made reference to Lewis and Bennett (Mosq. News 39: 633, 1979) who record 33 species in the maritimes based on collection, literature, and examining the National Collection. Correlation was good for most species, but assuming correct identification, Aedes aberratus in New Brunswick and Aedes fitchii and Culiseta impatiens in Nova Scotia can be added to the table. Lewis and Bennett's (1979) records of Culex salinarius and Aedes euedes (based on Wood 1977, pers. comm.) in Nova Scotia were reported without verification and may therefore be invalid, as voucher specimens are not available in the National Collection. Also included in the first section is a detailed description of larval and adult structure, complimented with 16 well-drawn, labelled, and referenced figures. The section is concluded with a brief account of synonymy and authorship, although whenever taxonomic rules of nomenclature are discussed, reference should be made to the International Code for clarification.

Keys to species of larvae and both sexes of adult are based for the most part on easily observed characters, although the extensive use of scales requires specimens in optimal conditions. The advantage of figures included in keys cannot be over-emphasized. Each genus is introduced with adult and larval characteristics and a brief account of biology. Species descriptions include synonymy (based on North American species only), descriptions of both sexes of adult and the larvae, usually a remarks section (includes features to distinguish between closely related species), a brief section on biology (featuring vector capacity and notes based on literature available), and worldwide distribution. Accompanying each species description is a plate of figures featuring cephalic and caudal larval views, male and female tarsal claws, dorsal and lateral adult thoracic view, male terminalia, hypostomial plates, and other features. As the plates contain minimal amounts of labelling reference to the structure section may be required. Locality maps distinguish between specimens examined by the authors, literature records, and localities where specimens are believed to have been incorrectly identified.

I discovered one error in the key to adult male Aedes, and the first author has kindly corrected the problem.

Page 107 Couplet 13	Replace '18' with '19'
Page 108 Couplet 17	Replace ' <u>fitchii</u> ' with '18'

Following species descriptions is a list and discussion of 15 species potentially occurring in or incorrectly recorded from Canada. A glossary of 179 terms is included with appropriate definitions, references to figures, and literature references where applicable.

Although the text includes 500 references (up to and including some for 1978), I have noticed some major works such as Service (1976, Mosquito ecology. Field sampling methods, Applied Science Publishers, London) and Horsfall et al. (1973, Bionomics and Embryology of the Inland Floodwater Mosquito Aedes vexans, University of Illinois Press, London) are missing, indicating that literature review is not as complete or as selective as it might have been. The index not only lists generic names and species epithets, but also places principal entries in bold face and junior synonyms in italics. The text is concluded with a 4 page fold-out table of selected characteristics useful for distinguishing among larvae of species of Aedes.

Reproduction of the volume is excellent. Headings and type setting of keys and text are in good contrast and the problems of previous volumes have been rectified (see G.E. Ball, Bull. Ent. Soc. Can. 9(1): 43-45). However, the 396 page volume may require rebinding after extensive use as the binding on my copy has cracked already.

The authors and artist are to be commended as the volume is comprehensive, and invaluable. The figures in the keys will facilitate its frequent use for temporary or inexperienced mosquito systematists in abatement programs. At a cost of \$8.00 in Canada, purchasers will undoubtedly be pleased.

K.R. Parker
Department of Entomology
University of Alberta
Edmonton, Alberta

Larsson, S.G., 1978. Baltic Amber - A Paleobiological Study. Entomograph Series, v. 1. Scandinavian Science Press, Ltd. Klampenborg-Denmark. 192 pp., 12 plates, 62 line drawings.

The climate and biosphere of the earth is highly zonal at present, quite a contrast to conditions prevailing 50 million years ago, during the Eocene, when tropical forests existed intermittently as far north as Alaska. Nevertheless, in spite of the great changes which have occurred since the Eocene many of the insects of that time were closely related - in some cases even congeneric - with present day taxa. We know this to be the case chiefly from study of the spectacularly well-preserved arthropod fossils found embedded in the Eocene Baltic Amber. Most taxonomists are familiar with the Baltic Amber specimens that pertain to their particular group of interest, but for the majority of entomologists and zoologists the literature on amber fossils is highly disseminated and for the most part out of date. The last comprehensive review of amber fossils appears to be Bachofen-Echt's 1949 book (in German). Thus the time has long been ripe for a new compilation. Larsson's book goes far toward fulfilling that need.

Although the book concerns Baltic Amber, we learn much from it about amber fossils in general. There is one chapter detailing the facts on composition of amber, and scattered throughout the remainder of the text are numerous examples which illustrate some of the problems associated with amber fossils. For example, they almost always constitute an assemblage of specimens of differing age. The Baltic Amber itself probably spans a time period as long as twenty million years. Moreover the book shows that many of the amber inclusions are not as revealing of critical structures as some illustrations of the best specimens lead one to believe. Larsson's book also provides insight to the special geological conditions necessary for preservation of insects in amber. It was a surprise to learn that such specimens, having survived millions of years of burial, transport in streams, and compression from the weight of Pleistocene glaciers, are nevertheless susceptible to rapid deterioration in the museum environment.

But most important one quickly comes to realize, after reading a few chapters in the book, that the Baltic Amber fossils can hardly be a true "fauna". At best they constitute only a very special type of death assemblage. Yet in a number of instances, the author discusses the fossils as if they do represent a discrete fauna, going so far in the concluding section of the book to attempt a reconstruction of the "amber forest" on the basis of the insect fossils. To me this seems a dangerous procedure. We now know that the Eocene witnessed several environmental fluctuations, and hence the amber fossils, representing insects living throughout that epoch, may reflect any of a number of different types of forest. The only similarity between these would have been that they all contained species of trees yielding the succinite-type resin of which most (not all) amber from the Baltic is formed.

I question Larsson's attempt to refer the Baltic amber to a single tree species - *Pinites succinifer*. It seems more probable, in view of statements made in the book, that Baltic succinite resin was characteristic of a group of tree species, which, if they had a collective ecological amplitude as wide as that of some existing conifers, might easily have grown in markedly different types of forest. In other words I am not surprised that Larsson has difficulty accounting for all of the amber taxa in his reconstructed "amber forest".

The arrangement of the book is unorthodox. After introductory chapters on the composition of amber, the age of Baltic Amber and its probable source, Larsson embarks on a niche by niche review of the fossils. As a consequence some insect groups are discussed in several different sections, and important conclusions are buried. On the other hand these problems are not too serious, and it could be argued that since the taxonomic format has been used in the past, Larsson is justified in using a new approach.

My remaining criticisms concern some misleading geological statements and numerous instances of awkward sentence structure. None of these faults really detract from the ultimate usefulness of the book - as a general reference to all those having a passing interest in amber fossils, and as a catalogue to the collections housed at the Zoological Museum in Copenhagen.

I cannot read Larsson's book without feeling pangs of envy. The data on amber fossils presented there cry out for comparison with Eocene fossil assemblages in North America. On the basis of what is known about Tertiary geography we can surmise that there would be great similarity of Eocene faunas from North America and Europe. However, even though amber is found in Tertiary sediments

from various sites in Arctic and northwestern North America, to my knowledge no insect fossils have been seen. Perhaps this disparity only emphasizes the peculiar geological, historical and cultural conditions that have combined to make the Baltic Amber such an entomological treasure trove.

Reviewed by: John Matthews.

Insects and Other Invertebrates of the World on Stamps. Ed W.F. Stanley. A.T.A. Handbook No. 98. American Topical Association Inc., 3306 North 50th St., Milwaukee, Wisconsin. 53216. \$10.00 U.S. postpaid.

Entomologists are generally a peculiar lot. Taxonomists in particular spend countless hours staring at insects, looking for minute differences, then identifying and classifying them. A remarkably high proportion of entomologists, especially taxonomists, spend countless spare-time hours staring at postage stamps, looking for minute differences, then identifying and classifying them. A favorite philatelic specialization is, you guessed it, insects on stamps. This handbook will be particularly welcome to entomologists although they aren't the only philatelists who are fascinated by natural history.

The book has few illustrations, black and white only, but the separate taxonomic and philatelic listings, with cross indexing, make the book extremely useful. Lepidoptera, other insects, and other invertebrates are listed separately. Issues of 1977 and earlier are included.

I was sadly disappointed to see not one Canadian stamp bearing the likeness of an insect, even a stylized insect as a minor design element. This in spite of the ESC's request to the Canada Post Office in 1956, the year of the Xth International Congress of Entomology in Montreal. One stamp, the 1950 \$1 fisheries issue (Scott No. 302 and 027) illustrated four marine invertebrates, two of which were arthropods; not much consolation.

D.C. Eidt

BOOK NOTICES

Economic Thresholds and Sampling of Heliothis Species on Cotton, Corn, Soybeans and Other Host Plants. Southern Cooperative Series Bull. No. 231. March 1979. 159 pp. (Agricultural Communications, Texas A & M University, College Station, Texas 77843). Single copies by request, multiple copies \$1.60 (U.S. each).

This bulletin was compiled by the Economic Thresholds and Sampling Subcommittee of Regional Research Project S-59. "Ecology and Management of Heliothis Species on Cotton, Corn, Soybeans and Other Host Plants." The concepts and techniques are outlined and economic thresholds for Heliothis spp. on various crops are discussed with emphasis on the present status and future needs for research. Separate chapters are devoted to computer simulation, sequential decision sampling, point sample scouting and sampling for adults, for predators and parasites and for Heliothis spp. on native hosts.

C.R. Ellis

Vogt, G.B., J.U. McGuire, Jr., and A.D. Cushman. 1979. Probable Evolution and Morphological Variation in South American Disonychine Flea Beetles (Coleoptera: Chrysomelidae) and their Amaranthaceous Hosts. Technical Bulletin 1953, United States Department of Agriculture. 148 pp.

This bulletin describes morphological and evolutionary studies of several species of disonychine flea beetles that were introduced into the southern United States from South America to combat alligatorweed. The publication consists of four parts. The first part deals with relationships among flea beetles of the genera *Agasicles* and *Dionycha* and between these chrysomelids and their host plants. An evolutionary dendrogram for the beetles and plants is proposed in the second part. The third and largest part of the publication deals with morphological variation in both the insects and the plants, numerous measurements of both are presented, the data are analyzed in detail, and apparent correlations between flea beetle form and host plant stem diameter are revealed. In the fourth part the authors discuss the evolutionary and biogeographical meaning of the data, its taxonomic value, and its significance in evaluating the various flea beetle species as biocontrol agents.

H.G. Wylie

Collingswood, C.A. 1979. The Formicidae (Hymenoptera) of Fennoscandia and Denmark. (Fauna Entomologica Scandinavica. Vol. 8). Scandinavian Science Press Ltd. Klampenborg, Denmark. 174 pp.

This reference book claims to be the first since 1939 to include descriptions of the ant species found in Fennoscandia and Denmark. Brief initial chapters discuss morphology, bionomics and ecology, distribution and faunistics, and nomenclature and systematics. The remaining 146 pages are a taxonomic presentation of the ant species of the area. Keys to subfamilies, genera and species are given for workers, females and males. These keys are supported by many illustrations throughout the text. With few exceptions, the type species, descriptions of the worker, queen and male, distribution, and notes on biology are given for each species. A concluding five-page table shows distribution of species by country for Great Britain and Germany and by province for Norway, Sweden, Finland and Denmark. The three Russian provinces adjoining Finland are also included in the table.

Although not alluded to in the title nor introduction, this book is also a guide to the ants of the British Isles. Both text comments and maps showing distributions of species include Great Britain. In fact, species of ants occurring in Great Britain and not in Fennoscandia and Denmark are included.

G.L. Ayre

Ossiannilsson, F. 1978. The Auchenorrhyncha (Homoptera) of Fennoscandia and Denmark. Part 1: Introduction, infraorder Fulgoromorpha. Fauna Entomologica Scandinavica 7(1): 222 pp. Available from Scandinavian Science Press Ltd., DK-2930 Klampenborg, Denmark; "very moderately priced".

This volume is the first of a series of three parts scheduled to be completed in 1982. It is designed for use by both specialist and non-specialist taxonomists as a taxonomic summary of the 415 Homoptera of the Fulgoromorpha and Cicadomorpha found in Denmark, Norway, Sweden and Finland. The first part includes introductions to morphological, ecological and economic aspects of Homoptera as well as to the systematics of the Fulgoromorpha. The systematic section gives short descriptions of each taxon, the distribution of each species, and such biological information as is known at present. The text is lavishly decorated by illustrations of genitalic structures. Habitus illustrations are restricted to four plates (two in colour) of one or two representatives of each of 26 of the 45 genera discussed, and 13 line drawings of heads (with varying amounts of attached thorax). The taxa are keyed mostly by external characters of body shape and colour.

The brief text and large and usually clear illustrations make this book an attractive and useful addition to the specialist's library. Unfortunately, a non-specialist will find some difficulty in using it. The lack of a table of contents, the scattered illustrations, and the absence of comparative discussion necessitate much searching. The family descriptions omit some useful information.

The keys are incomplete and usually lack supporting references to pertinent illustrations. The illustrations are not chosen to support the text, and are sometimes too dark for clarity. The abbreviations for the distribution records are not explained. There are no maps. The bibliography and species catalogue will not appear until the third and final part is published in 1982; meanwhile the reader is left at sea.

K.G.A. Hamilton

Starý, Petr. 1979. Aphid Parasites (Hymenoptera, Aphididae) of the Central Asian Area. Published by Academia, Czechoslovak Academy of Sciences, but distributed by Dr. W. Junk b.v., P.O. Box 13713. The Hague, The Netherlands. 114 pages, soft cover.

This is another in a series of studies on aphid parasites of particular zoogeographical areas by Petr Starý, or Starý and colleagues. The Central Asian area includes most of the Central Asian republics of the U.S.S.R., most of Iran, Afghanistan, a part of Pakistan and a part of northern China and Mongolia. According to the author the aim of this small book is to summarize information pertaining to taxonomy of the aphidiid parasites of aphids in the Central Asian area, so that better use may be made of the parasites in pest management or biological control programs. Part I is a Review of Genera and Species. Part II is called Distribution and is a brief outline of vegetation in the areas covered. Part III is designated as Biological Peculiarities (of the parasites) and Part IV is concerned with Utilization in Aphid Pest Management. Part V is a Key to the General and Species, with line drawings. Part VI is a list of the aphids, and the parasites reported to occur on each species of aphid. At the end there is an Index to parasite names, an Index to aphid names, and an Index to plant names. This book will be a welcome addition to the knowledge of aphid parasites, and should aid in improved utilization of parasites in aphid pest management attempts.

A.G. Robinson

Boethel, D.J. and R.D. Eikenbary (Editors). 1979. Pest Management Programs for Deciduous Tree Fruits and Nuts. Plenum Press, New York. xi + 256 pp. US \$29.50.

This book is based on papers presented at the 1977 National Meeting of the Entomological Society of America and additional invited paper. Of the seven papers, four deal rather specifically with almonds, walnuts, and pecans, none of which are a significant crop in Canada. There is one paper each on pears and apples. The paper on apple orchards in Pennsylvania involves systems analysis and simulation modelling as well as more traditional approaches. The last paper, entitled Developments in Computer-based IPM Extension Delivery and Biological Monitoring System Design, is the only one of the seven likely to be of general interest to applied entomologists.

R.J. Lamb

Treherne, J.E., Berridge, M.J. and Wigglesworth, V.B. (Editors). 1979. Advances in Insect Physiology, Vol. 14. Academic Press. 440 pages, hard cover. U.S. \$57.00.

Volume 14 of this well established series contains six articles: (1) Atmospheric water absorption in arthropods by J. Machin, (2) Insect vitellogenin: identification, biosynthesis and role in vitellogenesis by F. Engelmann, (3) Physiology of moulting in insects by A.M. Jungreis, (4) Morphology and electrochemistry of insect muscle fibre membrane by T. Piek and K. Djie Njio, (5)

- (5) Theories of pattern formation in insect neural development by J. Palka,
(6) The scent glands of Heteroptera by B.W. Staddon.

R.P. Bodnaryk

Miller, T.A. 1979. Insect Neurophysiological Techniques. Springer-Verlag. 308 pages, hard cover. U.S. \$25.80.

This is the first volume of the new Springer Series in Experimental Entomology. The series will be welcomed by teachers and researchers alike, especially if the high standards set by the series editor and author of this first volume are maintained.

Although the first volume deals specifically with insect neurophysiological techniques, it will be of interest to a wider audience of experimental biologists. Part I describes instruments, tools and materials useful in neurobiological research. A nine page Appendix lists addresses of suppliers of often exotic and difficult-to-locate apparatus and materials. Part II describes methods used to study unrestrained insects (Actographs). Part III deals with techniques of free-moving and tethered insect preparations. Part IV describes insect organ and tissue preparations.

Insect sensory neurophysiology is not dealt with in this volume, but according to the series editor, may be the subject of a future publication.

R.P. Bodnaryk

Rodriguez, J.G. (Editor). 1979. Recent advances in acarology. Academic Press: New York, San Francisco, London. Vol. I, xxii+ 631 pp., U.S. \$35.00; Vol. II, xxiii+ 569 pp., U.S. \$31.50; hard covers.

This is a two-volume presentation of the Proceedings of the V International Congress of Acarology, held August 6-12, 1978 at Michigan State University, East Lansing. Volume I, published September 28, 1979, contains 80 papers organized in six sections: (1) pest management of agricultural mites, (2) biology of spider mites, (3) stored product acarology, (4) physiology, biochemistry, and toxicology of Acari, (5) ecology, behavior, and bionomics of Acari, and (6) recent advances in soil mite biology. Volume II, published October 17, 1979, contains 74 papers of another six sections: (1) management of Acari of medical and veterinary importance, (2) biology and ecology of Acari of medical and veterinary importance, (3) current research on disease transmission of Acari, (4) pheromonal communication in acarines, (5) specificity and parallel evolution of host-parasite in mites, and (6) systematics, morphology, and evolution of Acari.

Format of the volumes is exceptionally attractive, and binding, printings, and figures are of good quality. Mechanical drawbacks are minor: a few figures overly reduced (e.g., on pages 66, 127, 152, 167, 533 in volume I), a few inconsistencies in addresses of authors of more than one contribution, and a relatively low incidence of typographical errors. This is all the more commendable for the proceedings of a large meeting. More remarkable is the publication of this work only 14 months after the congress was held, which reflects both superior editorial effort and efficiency of Academic Press "rapid manuscript reproduction". By contrast, one cannot help but note that the proceedings of the IV International Congress of Acarology, held in August, 1974, at Saalfelden, Austria, were not published until November, 1979, five years later!

The quality of submitted papers varies from mediocre to truly noteworthy as might be expected of a compilation from any large meeting. But acarologists, entomologists and zoologists will find a variety of useful and stimulating contributions in these volumes.

E.E. Lindquist/R.N. Sinha

BOOKS RECEIVED

- Cairns, J. (1978). "Cancer, Science and Society". W.H. Freeman. San Francisco. 199 pages. U.S. \$13.00, hard bound; U.S. \$7.50, soft bound.
- Fretter, V. and J. Peake. (1979). "Pulmonates, Volume 2A: Systematics, Evolution and Ecology". 540 pages. U.S. \$50.75, hard bound. Academic Press.
- Fretter, V. and J. Peake. (1979). Pulmonates, Volume 2B: Economic Malacology", by A.R. Mead. 150 pages. U.S. \$25.20, hard bound. Academic Press.
- Bennig, W. (1979). "Phylogenetic Systematics". The University of Illinois Press. 263 pages. U.S. \$20.00, hard bound. (A reissue of the 1966 edition).
- Stoakley, J.T. (1979). Pine beauty moth. 11 pages U.K. 75 p. Her Majesty's Stationery Office.
- Proceedings of the Symposium on Grassland Fauna. 1977. Available from the Science officer, Royal Dublin Society, Ballsbridge, Dublin 4. 366 pages, 12 pounds.
- Spruce Budworm Research in Maine: A User's Guide. Available from the Maine Forest Service, State of Maine Department of Conservation, Augusta, Maine 04333. 175 pages. Free.

WORKING GROUPS OF CANUSA (EAST) MEETING

The second meeting of the CANUSA (E) working groups was held from 29 October - 2 November 1979 at the Sutton Place Hotel, Toronto, as arranged by Dr. Charles H. Buckner, Program Leader, Canadian Forestry Service, Ottawa. CANUSA is an abbreviation for the International Canada/United States Spruce Budworms Research, Development and Application Program.

Over 100 people attended the meetings. The purpose was to review research activities and recommend research areas or projects for investigation in 1980.

The eastern component of CANUSA is structured around eight working groups, each chaired by co-leaders. Working Groups and leaders are: (1) Economics: Dr. L. Irland, Maine Forest Service; Dr. K. Runyon, Canadian Forestry Service; (2) Environmental Impacts: Dr. T. May, University of Maine; Dr. P. Kingsbury, Canadian Forestry Service; (3) Principles of Outbreak Causes: Dr. H. Batzer, USDA Forest Service; Dr. Y. Hardy, Laval University; (4) Habitat Manipulation, Stand Susceptibility and Vulnerability: Dr. J. Dimond, University of Maine; Mr. C. Miller, Canadian Forestry Service; (5) Forest Damage Assessment: Mr. D. Corcoran, Great Northern Paper Company; Dr. R.J. Blais, Canadian Forestry Service; (6) Suboutbreak Population Monitoring: Dr. G. Simmons, Michigan State University; Dr. W.L. Sippell, Canadian Forestry Service; (7) Strategic Population Treatments: Dr. P. Shea, USDA Forest Service; Dr. P.C. Nigam, Canadian Forestry Service; and (8) Integrated Pest Management and Decision Making: Dr. C. Shoemaker, Cornell University; Mr. J.C. Mercier, Le Group COGEP, Quebec.

From these meetings CANUSA (E) will develop a request for research proposals and solicit proposals for funding in 1980. The next working group will be held in October 1980. Information on CANUSA (E) can be obtained from: Dr. D.M. Schmitt, Program Manager, Spruce Budworms Program, Northeastern Forest Experiment Station, 370 Reed Road, Broomall, Pennsylvania 19008.

MEETING ANNOUNCEMENTS

1880 - ENTOMOLOGY CENTENNIAL SYMPOSIUM - 1980

at Iowa State University

June 4-5, 1980

A two-day celebration commemorating 100 years of entomology instruction at Iowa State University of Science and Technology in Ames is of special interest to entomologists. Professor Herbert J. Osborn, master teacher and pioneer hemipterist, took charge of entomology instruction at ISU in 1880, and developed full-term courses dealing primarily with insects of economic importance.

In addition to the formal program, social periods, luncheons, a banquet, exhibits, tours, and visits are also planned. Distinguished entomology alumni have been invited to speak on the status and future of various aspects of the science of entomology representing seven historically strong areas at Iowa State University. The subject areas and persons being honored are:

1. Administration, Herbert J. Osborn
2. Systematics, Dr. Harry H. Knight
3. Apiculture, Dr. Oscar W. Park
4. Economic Entomology, Dr. George C. Decker
5. Physiology, Dr. J. Franklin Yaeger
6. Toxicology, Dr. Charles H. Richardson
7. Extension, Dr. Harold Gunderson

Alumni, friends, and entomological colleagues are cordially invited to participate in this historic event. Formal invitation and programs will be sent to alumni and former faculty members soon after April 1, 1980.

For additional information contact J.R. DeWitt, Department of Entomology, 102 Insectary, Iowa State University, Ames, IA 50011.

INSECT EXCHANGES

Anyone interested in collecting any species of insects for cash or for American insects in exchange, please respond in English to: Mr. Jeffery J. Abbott, Department of Entomology, Science 2 Building, Room 421, Iowa State University, Ames, Iowa 50011, U.S.A.

EMPLOYMENT — EMPLOIS

POSITIONS AVAILABLE

ENTOMOLOGIST. Tenure track. Rank and salary commensurate with qualifications. Develop and conduct extension program to assist commercial floriculturists and pest control operators. Also serve homeowners with aid of technical assistant. Serve as a resource or training coordinator for state, county and regional workers. Initiate and conduct investigations of current problems. Ph.D. or equivalent in entomology required. Position available immediately. Applications accepted until April 1, 1980, or until position filled. Send letter indicating interest, a curriculum vitae, transcripts, and names of three references to Mr. Gordon W. Fellows, Acting Chairman, Suburban Experiment Station, University of Massachusetts, 240 Beaver Street, Waltham, MA 02154. An Equal Opportunity/Affirmative Action Employer.

INTEGRATED BLUEBERRY PEST MANAGEMENT PROJECT LEADER. Full-time professional position for a period not to exceed two years. Initial appointment through 9/30/80; reappointment subject to performance and availability of funds. LOCATION: Department of Entomology, Deering Hall, University of Maine at Orono. DEADLINE FOR APPLICATION: February 15, 1980 or until suitable applicant is found. DATE FOR FILLING POSITION: March 15, 1980 or as soon as possible thereafter. SALARY: \$16,000. TRAVEL: Automobile required. Official travel expense reimbursed at 18c per mile. SPECIFIC QUALIFICATIONS: Ph.D. degree in entomology required, with training in agricultural crop production, integrated pest management, and pesticide application methods. Ability to meet people easily and to gain cooperation is essential. Ability to work successfully with advisory boards, volunteers and local residents. Ability to work effectively with other Extension professional staff. RESPONSIBILITIES: In cooperation with other Extension staff and advisory committees, plan, conduct, evaluate and report on the integrated blueberry pest management program. Although assigned primarily to eastern Maine, this full-time Extension position is responsible for providing leadership in a new integrated pest management program on low-bush blueberries statewide. Program emphasis will be in reducing or eliminating insecticide applications for the blueberry maggot through fly monitoring with traps and in eliminating environmental problems with insecticides. Leader duties will include training and management of summer scouts, dissemination of information to growers, collecting and computer storage of data, education of and maintaining good relationships with growers and concerned citizen groups, reporting progress of the IPM project. APPLICATION FORM available from the Cooperative Extension Service, 100 Winslow Hall, University of Maine at Orono 04469, U.S.A. Telephone (207)581-2211. AN EQUAL OPPORTUNITY EMPLOYER.

INSECT PHYSIOLOGIST/TOXICOLOGIST. Tenure track position at Assistant Professor level, 30% teaching, 70% research. Academic year appointment with expectation that appointee will compete for summer research funding. Capable of developing a vigorous research program, guiding graduate research, teaching graduate and undergraduate courses. Assume responsibility for an on-going program of IGR research against spruce budworm. Provide public service in development of IPM programs and advising state agencies on pesticide toxicology. Minimum salary \$16,500 for 9 months, available September 1, 1980. Send applications to J.B. Dimond, Department of Entomology, 312 Deering Hall, University of Maine, Orono, ME 04469. Deadline April 1, 1980 or until filled.

RECENT DEATHS

BOYES, J. Wallace, London, Ontario. On January 12, 1980, age 73. Former chairman, Department of Genetics, McGill University and Dean of Science, University of Botswana, Lesotho & Swaziland. Member ESC.

HEIMPFL, Arthur M., Beltsville, Maryland. On November 10, 1979, age 56. Formerly research scientist at Sault Ste. Marie, Ontario, and laboratory chief, insect pathology, U.S.D.A., Beltsville. Former member ESO.

MILLER, Cameron, Vineland, Ontario. In October 1979. Former entomologist, Agriculture Canada, Vineland, Ontario, and school teacher. Former member ESO.

SWAINE, Mrs. J.M., Ottawa, Ontario. In February 1979. Widow of Dr. J.M. Swaine, Forest Entomology.

THOMPSON, Mrs. W.R. (Mary Carmody), Ottawa, Ontario. On February 7, 1980, age 97. Widow of Dr. W.R. Thompson, Commonwealth Institute of Biological Control.

COMMITTEES OF E.S.C.

<i>Annual Meeting:</i>	J.N. McNeil (c)	Quebec
	J.A. Shemanchuk	Lethbridge
	Vacant	Ontario
	W. Preston	Winnipeg
<i>Elections:</i>	R.A. Brust (c)	Winnipeg
	P.W. Arnfield	Winnipeg
	P.A. MacKay	Winnipeg
<i>Employment:</i>	D.J. Madder (c)	Guelph
	G.B. Kinoshita	Mississauga
	Scott MacDonald	Guelph
<i>Fellowship Selection:</i>	M.D. Proverbs (1980) (c)	Summerland
	F.J. Bird (1981)	Sault Ste. Marie
	J.R. Blais (1980)	Quebec
	G.S. Cooper (1981)	Mississauga
	M.E. MacGillivray (1982)	Fredericton
	H.F. Madsen (1982)	Summerland
<i>Achievement Awards:</i>	S.R. Loschiavo	Winnipeg
<i>Finance:</i>	R.W. Kobylnyk (c)	Ottawa
<i>Heritage:</i>	A.W. MacPhee (c)	Kentville
	P.W. Riergert	Regina
<i>Insect Common Names and Insect Cultures:</i>	W.Y. Watson	Waterloo
	J.S. Kelleher	Ottawa
<i>Membership:</i>	W.G. Friend (c)	Toronto
	H.J. Herbert	Kentville
	J.A. George	London
	J.-C. Tournier	Montreal
	J.C. Conroy	Winnipeg
<i>Nominations:</i>	F.L. McEwen	Guelph
	S.B. McIver	Toronto
	A.D. Tomlin	London
<i>Publications:</i>	R.P. Bodnaryk (c)	Winnipeg
	C.R. Ellis	Guelph
	R.J. Lamb	Winnipeg
	J.D. Shorthouse	Sudbury
	C. Cloutier	Quebec
<i>Scholarships:</i>	R.F. Morris (c)	St. John's
	W. Preston	Winnipeg
	B.S. Heming	Edmonton
	E.F. Johnson	Stoney Creek
	A.D. Tomlin	London
	J.-G. Pilon	Montreal
	J.P. Bourassa	Trois-Rivieres

<i>Science Policy and Public Education:</i>	G.B. Wiggins (c) S.R. Loschiavo W.G. Friend S.B. Hill J.N. McNeil R. Stewart W.G. Wellington	Toronto Winnipeg Toronto St. Anne de Bellevue Quebec City St. Anne de Bellevue Vancouver
---------------------------------------------	----------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------

<i>Biological Survey of the Insects of Canada:</i>	A. Downes (c) (1981) P.P. Harper (1980) J.V. Matthews (1980) D.K. McE. Kevan (1980) G.C.E. Scudder (1980) G.B. Wiggins (1980) E.L. Bousfield (1981) K.G. Davey (1981) A. Francoeur (1981)	Ottawa Ottawa St. Anne de Bellevue Vancouver Toronto Ottawa Downsview Chicoutimi
----------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------

<i>By-Laws, Rules and Regulations:</i>	M.E. MacGillivray (c) A. Comeau D. Davies	Fredericton Ste. Foy Hamilton
----------------------------------------	-------------------------------------------------	-------------------------------------

REPRESENTATIVES

<i>Biological Council of Canada:</i>	W.J. Turnock R.K. Stewart D.E. Bright	Winnipeg St. Anne de Bellevue Ottawa
--------------------------------------	---------------------------------------------	--------------------------------------------

<i>Canadian Committee on Water Pollution:</i>	D.M. Rosenberg	Winnipeg
-----------------------------------------------	----------------	----------

<i>CSA Committee on Common Names for Pest Control Chemical:</i>	L.A. Roadhouse	Ottawa
-----------------------------------------------------------------	----------------	--------

<i>SCITEC:</i>	S.B. Hill E.G. Munroe	St. Anne de Bellevue Ottawa
----------------	--------------------------	--------------------------------



**ENTOMOLOGICAL SOCIETY OF CANADA
SOCIÉTÉ ENTOMOLOGIQUE DU CANADA**

EXECUTIVE COUNCIL — CONSEIL EXÉCUTIF

President	W. J. Turnock Research Station, Agriculture Canada 195 Dafoe Road Winnipeg, Manitoba R3T 2M9
First Vice-President	S. R. Loschiavo Research Station, Agriculture Canada 195 Dafoe Road Winnipeg, Manitoba R3T 2M9
Second Vice-President	G. B. Wiggins Royal Ontario Museum 100 Queen's Park Toronto, Ontario M5S 2C6
Past-President	F. L. McEwen Department of Environmental Biology University of Guelph Guelph, Ontario N1G 2W1

TRUSTEE — FIDUCIAIRES

Secretary	J. E. Laing Department of Environmental Biology University of Guelph Guelph, Ontario N1G 2W1
Treasurer	E. C. Becker 1320 Carling Avenue Ottawa, Ontario K1Z 7K9
Scientific Editor	D. C. Eidt Maritimes Forest Research Centre Dept. of Fisheries and the Environment P.O. Box 4000, Fredericton, N.B. E3B 5P7
Bulletin Editor	D. M. Davies

DIRECTORS — ADMINISTRATEURS

Directors-at-Large	R. H. Burrage W. G. Friend R. F. Morris	M. D. Proverbs J. D. Shorthouse
Regional Directors	J. C. Arrand, E.S.B.C. J. A. Shemanchuk, E.S. Alta. P. W. Riegert, E.S. Sask. R. A. Ellis, E.S. Man.	D. C. Herne, E.S. Ont. J. N. McNeil, S.E. Qué. R. Storch, Acadian E.S.

Contributions and correspondence should be sent to: D.M. Davies, Department of Biology, McMaster University, Hamilton, Ontario.

BUSINESS INQUIRIES

Inquiries about subscriptions and back issues should be sent to the Entomological Society of Canada, 1320 Carling Avenue, Ottawa, Ontario K1Z 7K9.

DEADLINE

The deadline for the next issue Vol. 12, No. 2 for June 1980 is 15 May. The approximate date of mailing will be 15 June.