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Bulletin

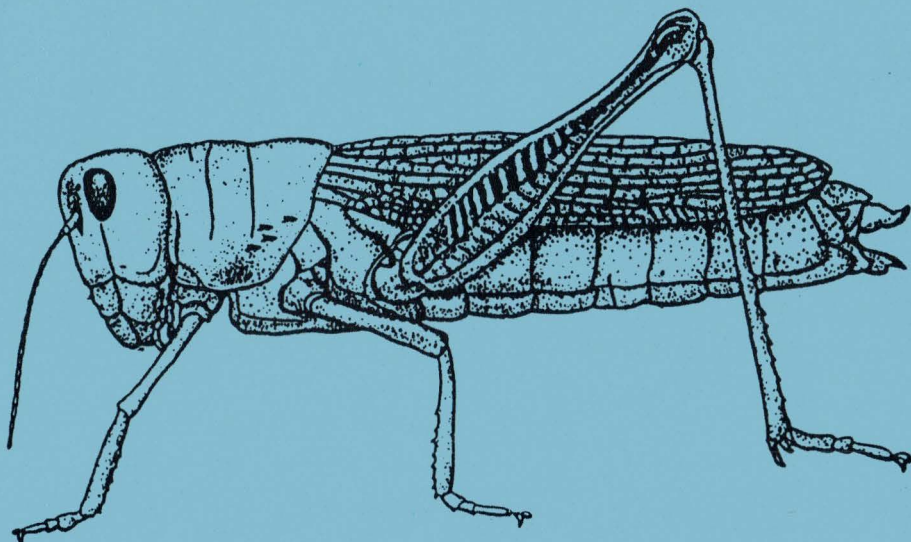
Entomological Society
of Canada

Société d'Entomologie
du Canada

Volume 29

No. 2

June/juin 1997



Entomological Society of Canada
Société d'Entomologie du Canada

393 Winston Avenue, Ottawa,
Ontario, Canada K2A 1Y8

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des matières sur la couverture-arrière

Date of issue/Date de publication:
June/juin 1997

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

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

Illustrated on the front cover is a female *Melanoplus bivittatus* (Say) (Orthoptera: Acrididae). The two-striped grasshopper occurs widely in North America. It prefers locations that are relatively moist. It is polyphagous and feeds on many kinds of plants, but prefers forbs. This grasshopper is a major crop pest causing great damage to small grains, alfalfa, and corn. [Drawing courtesy of R.E. Pfadt, Laramie, Wyoming.]
La page couverture illustre la femelle adulte de *Melanoplus bivittatus* (Say) (Orthoptera: Acrididae). Le criquet birayé est très répandu en Amérique du Nord. On le retrouve surtout dans les endroits relativement humides. C'est un polyphage qui se nourrit de plusieurs sortes de plantes mais montre une préférence pour les herbacées. Ce criquet est un important ravageur des petits grains, de la luzerne et du maïs. [Le dessin est une gracieuseté de R. E. Pfadt, Laramie, Wyoming].

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

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

SOCIETY BUSINESS/AFFAIRES DE LA SOCIÉTÉ

47th Annual General Meeting

The Annual General Meeting of the Entomological Society of Canada will be held at the *Crowne Plaza Hotel* in Edmonton, Alberta, on October 5-7, 1997.

La réunion annuelle générale de la Société d'entomologie du Canada aura lieu au *Crowne Plaza Hôtel* à Edmonton, Alberta, le 5-7, octobre 1997.

Governing Board Meeting

The Annual Meeting of the Governing Board will be held at the *Crowne Plaza Hotel* in Edmonton, Alberta on October 4 & 8, 1997.

La réunion annuelle du conseil d'administration se tiendra au *Crowne Plaza Hôtel* à Edmonton, Alberta, le 4 & 8 octobre 1997.

Matters for consideration at any of the above meetings should be sent to the secretary at the address below:

Veuillez faire part au secrétaire de tout sujet pouvant faire l'objet de discussion à l'une ou l'autre de ses réunions en communiquant à l'address suivante:

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

Web Page for the ESC

A Web page has been opened for items relating to the Entomological Society of Canada and can be accessed at the address below. <http://www.biology.ualberta.ca/esc.hp/homepage.htm>

The Canadian Entomologist and the Memoirs are available from the Ottawa office and may be purchased by Mastercard or VISA as well as by cheque or money order.

Please send all correspondence concerning
the Bulletin to:

Dr. Hugh J. Barclay
Bulletin Editor
Pacific Forestry Centre
506 West Burnside Road
Victoria, B.C.
V8Z 1M5
Tel: (250) 363-0736
Fax: (250) 363-0775
E-mail: hbarclay@pfc.forestry.ca

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

Dr. Sheila Fitzpatrick
Chair, Publications Committee
Pacific Agri-Food Research Centre
6947 #7 Hwy, P.O. Box 1000
Agassiz, B.C.
V0M 1A0
Tel: (604) 796-2221
Fax: (604) 796-0359
E-mail: fitzpatrick@em.agr.ca

The deadline for submissions to be included in the next issue (Vol. 29(3)) is **August 1, 1997**
La date limite pour recevoir vos contributions pour le prochain numéro (Vol. 29(3)) est le **1 août 1997**



ESA/ESC '97

**The Joint Meeting of the
Entomological Society of Canada and the
Entomological Society of Alberta**

Crowne Plaza/Chateau Lacombe Hotel, Edmonton, Alberta,
October 4-7, 1997

TENTATIVE PROGRAM

Saturday, October 4, 1997

08:30-17:30 Entomological Society of Canada Governing Board Meeting

Sunday, October 5, 1997

10:00-15:00 Registration
13:00-17:00 Workshops (2)
17:00-18:30 Linnean Games
18:30-19:30 Plenary Lecture
19:30-20:30 Students Meet the Board
20:30-23:00 Wine and Cheese

Monday, October 6, 1997

08:00-10:00 Registration
08:30-10:00 Opening Remarks, ESC Awards, Gold Medal Address
10:00-12:00 Plenary Symposium "Biodiversity: What's next?" (Langor)
13:30-15:00 Submitted Papers/Graduate Student Papers (Presidents's Prize)
13:30-16:30 Workshop(1)
15:30-16:30 Poster Session
15:30-16:30 Heritage Lecture (G.E. Ball)
16:30-17:30 Entomological Society of Alberta General Meeting
19:00-22:00 President's Reception (by invitation only)
17:00-21:00 Linnean Games: Finals

Tuesday, October 7, 1997

09:00-12:00 Symposium "Insects and Ecosystem Productivity" (J.R. Spence)
Workshop, Submitted Papers
13:30-16:00 Submitted Papers, Poster Session
16:30-17:30 Entomological Society of Canada General Meeting
18:30-23:00 Banquet

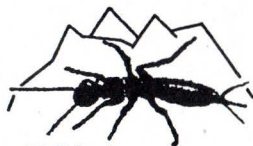
Wednesday, October 8, 1997

09:00-12:00 Symposium "Fluctuating Asymmetry" (K. Floate)
Submitted Papers, Workshop
12:00-13:00 Entomological Society of Canada Governing Board Meeting

TENTATIVE WORKSHOPS

Communicating Entomology
Lygus Bug Management
Biocontrol of Field Crop Pests

For additional information, please contact: Dr. Bruce Hemming, Dept. of Biological Sciences, University of Alberta, Edmonton, AB, T6G 2E9. Tel: (403) 492-4173; Fax: (403) 492-9234;
E-mail: bhemming@gpu.srv.ualberta.ca



**La Réunion conjointe de la
Société d'entomologie du Canada et la
Société d'entomologie de l'Alberta**

Crowne Plaza/Chateau Lacombe Hôtel, Edmonton, Alberta,
4-7 Octobre 1997

PROGRAMME PROVISOIRE

Samedi, 4 Octobre, 1997

08:30-17:30 Réunion du Conseil d'administration de la S.E.C.

Dimanche, 5 Octobre 1997

10:00-15:00 Inscription
13:00-17:00 Ateliers (2)
17:00-18:30 Jeux linnéens
18:30-19:30 Allocution générale
19:30-20:30 S.E.C. rencontre les étudiants
20:30-23:00 Vin et Fromage

Lundi, 6 Octobre 1997

08:00-10:00 Inscription
08:30-10:00 Ouverture, Prix de la S.E.C., Discours, Médaille d'Or
10:00-12:00 Symposium général "La Biodiversité: et puis quoi encore?" (Langor)
13:30-15:00 Communications scientifiques et celles des Etudiants (Prix du Président)
13:30-16:30 Atelier (1)
15:30-16:30 Session des affiches
15:30-16:30 Allocution: Héritage des Anciens (G.E. Ball)
16:30-17:30 Réunion générale annuelle de la Société d'entomologie de l'Alberta
19:00-22:00 Réception du Président (sur invitation seulement)
17:00-21:00 Jeux linnéens (finale)

Mardi, 7 Octobre 1997

09:00-12:00 Symposium "Les Insectes et la productivité des Écosystèmes" (J.R. Spence)
Ateliers, communications scientifiques
13:30-16:00 Communications scientifiques et session des affiches
16:30-17:30 Réunion générale annuelle de la Société d'entomologie du Canada
18:30-23:00 Banquet

Mercredi, 8 Octobre 1997

09:00-12:00 Symposium "Les Asymétries Fluctuantes" (K. Floate)
Communications scientifiques, Atelier
12:00-13:00 Réunion du Conseil de la Société d'entomologie du Canada

ATELIERS PROVISOIRES

Faire connaître l'entomologie
Gestion des punaises *Lygus*
Contrôle biologique des insectes nuisibles des récoltes

Pour plus de renseignements, veuillez communiquer avec: Dr. Bruce Heming, Dept. of Biological Sciences, University of Alberta, Edmonton, AB, T6G 2E9. Tél: (403) 492-4173; télé: (403) 492-9234; E-mail: bheming@gpu.srv.ualberta.ca



**The 1997 Joint Meeting
of the Entomological Society of Canada
and the Entomological Society of Alberta**

Edmonton, October 4 - 8, 1997
Crowne Plaza Hotel

REGISTRATION FORM

Check one: Regular Student

Name:
Last First Initial(s)

Title:

Address:

City: Province/State:

Postal Code: Telephone:

Fax: E-mail:

Registration fees (in \$CDN) include banquet ticket and GST. For late registration (after August 8, 1997), add \$25.00. Cheque should be payable to **ESA/ESC joint account**.

Please remember to register for the associates program if desired. For more information on activities, refer to associates program form.

Registration, regular	\$110	Associates Activities	
Registration, student	\$60	1. Poet's stroll	# persons
Registration, accompanying	\$50	2. West Edmonton Mall	# persons
		3. Ukrainian Village	# persons

Name of accompanying person Total.....

Accommodations: Rooms can be reserved at the Crowne Plaza Hotel at \$92.00 single/double occupancy. 20 rooms have been set aside for student members at a special rate of \$59.00 single/double occupancy. Student space is limited, so reserve as soon as possible. For a list of other accommodations, check the Greater Edmonton Visitors Guide website at: <http://www.tym.com/>

Reservations are available through:
Crowne Plaza/Chateau Lacombe Hotel
10111 Belamy Hill
Edmonton, AB
T5J 1N7
1-800-227-6963
Tel. (403) 428-6611; Fax. (403) 425-6564

Return this form and registration fees to:
Daryl J. Williams
ESC/ESA joint meeting
Canadian Forest Service
Northern Forestry Centre
5320-122 st., Edmonton, Alberta, T6H 3S5
Dwilliams@nofc.forestry.ca

**Please inform the hotel that you are attending
the ESC/ESA meeting when registering.**



**La Réunion Conjointe de 1997
de la Société Entomologique du Canada
et de la Société Entomologique de l'Alberta**

Edmonton, du 4 au 8 octobre 1997
Crowne Plaza Hôtel

FORMULAIRE D'INSCRIPTION

Indiquez: régulier ou étudiant

Nom:
Nom de famille Prénom Initiale(s)

Titre:

Adresse:.....

Ville:..... Province/Etat:.....

Code postal:..... Téléphone:.....

Télécopieur:..... Email:.....

Frais d'inscription (en monnaie canadienne) incluent un billet pour le banquet et la TPS.
Inscription tardive (après le 8 août 1997) ajouter \$25.00. Chèque fait à l'ordre de **"ESA/ESC joint account"**. Veuillez ne pas oublier de vous inscrire aux programmes associés si désiré. Pour plus d'information sur ces activités, vous référer au formulaire des programmes associés.

Frais d'inscription, régulier	\$110	Activités Associées	
Frais d'inscription, étudiant	\$60	1. Promenade des poètes	#personnes
Frais d'inscription, conjoint	\$50	2. West Edmonton Mall	#personnes
		3. Village Ukrainien	#personnes

nom du conjoint..... TOTAL.....

Hébergement: Vous pouvez réserver une chambre au Crown Plaza Hotel à \$92.00 occupation simple ou double. 20 chambres ont été mises de côté pour les membres étudiants au taux spécial de \$59.00 occupation simple ou double. Le nombre de chambres pour étudiants étant limité, réserver le plus tôt possible. Pour une liste d'hébergement, visiter le "Greater Edmonton Visitors guide website" au:

<http://www.tym.com/>

Réservation disponible auprès de:
Crown Plaza/Château Lacombe Hôtel
10111 Belamy Hill
Edmonton, AB T5J 1N7
1-800-227-6963
téléphone: (403) 428-6611
télécopieur: (403) 425-6564

*Veuillez retourner ce formulaire
ainsi que les frais d'inscription à:*
Daryl J. Williams
ESC/ESA joint meeting
Canadian Forest Service
Northern Forestry Centre
5320-122 st, Edmonton, AB, T6H 3S5
Dwilliams@nofc.forestry.ca

**Veuillez informer l'hôtel que vous assisterez
à la réunion ESC/ESA.**



ESA / ESC '97

**The 1997 Joint Meeting
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Edmonton, October 4 - 8, 1997
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**SUBMITTED PAPER, STUDENT PAPER, AND POSTER
PRESENTATION FORM**

DEADLINE: Postmarked on **June 30, 1997**

Author(s):

Address:

Title:

Abstract

Abstracts should be 50 words or less; submission by E-mail or on diskette is much preferred.

Form of presentation (Check one):

Regular

President's Prize*

Oral presentation (12 min + 3 min discussion)

.....

Poster presentation

.....

Name of presenter:

* To be eligible for the President's Prize you must meet the following criteria:

1. You must be enrolled in a graduate degree program or have graduated from a program less than six months prior to the meeting.
2. You must be registered at the meeting; and
3. you must be the principal investigator of the paper.

Projection equipment:

Slide and overhead projectors will be provided for each session. Slides should be organized in a carousel. Please contact the program chair if other equipment is required. Persons who intend to display posters should contact the program chair for information.

Please return abstract to:

W. Jan A. Volney
Canadian Forest Service
Northern Forestry Centre
5320-122 st., Edmonton, AB
T6H 3S5
E-mail: jvolney@nofc.forestry.ca

Volume 29 (2), June - juin, 1997

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et de la Société Entomologique de l'Alberta**

Edmonton, du 4 au 8 octobre 1997
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**COMMUNICATIONS ORALES RÉGULIÈRES ET
D'ÉTUDIANT(E)S, ET COMMUNICATIONS AFFICHES**

DATE LIMITE: marque postale **30 juin 1997**

Auteur(s):

Adresse:

Titre:

Résumé:

Les résumés ne doivent pas dépasser 50 mots; envoyer de préférence par messages électroniques ou sur diskette.

Format de présentation (ne cocher qu'une case):

communication orale (12min + 3min de discussion)

communication affiches

nom du présentateur:

régulier Prix du Président*

.....

.....

*Pour être éligible pour le Prix du Président, vous devez satisfaire les critères suivants:

1. vous devez être inscrit à un programme d'étude de troisième cycle ou avoir gradué d'un tel programme dans les 6 mois précédant la réunion conjointe.
2. vous devez être inscrit à la réunion conjointe et,
3. vous devez être le chercheur principal de la communication.

Équipement audio-visuel:

Un projecteur pour diapositive et un rétroprojecteur seront disponible à chaque session. Les diapositives doivent être dans un carrousel pour projecteur. Veuillez contacter le responsable du programme si vous avez besoin d'équipement supplémentaire. Les personnes présentant des affiches doivent contacter le responsable du programme pour plus amples informations.

Veuillez retourner le résumé à:

W.Jan A. Volney
Canadian Forest Service
Northern Forestry Centre
5320-122st, Edmonton, AB
T6H 3S5
e-mail: jvolney@nofc.forestry.ca



**The 1997 Joint Meeting
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ASSOCIATES PROGRAM

Please indicate which of the following activities would be of interest to you **on the registration form**.

1. October 4, Saturday

Early arrivals see #5 for suggested attractions.

2. October 5, Sunday - Stroll of Poets Festival

1:00 - 4:00 PM. Small groups of performers give short performances throughout the afternoon in various venues; most read their own poems. Location - Old Strathcona, an historical neighborhood with restored buildings (back to 1891) and many small boutiques, cafes, and restaurants. Transportation provided. Admission free.

3. October 6, Monday - West Edmonton Mall

After the opening session and Plenary Symposium. Shopping at West Edmonton Mall, the world's largest shopping and entertainment complex, complete with waterpark, amusement park, skating rink (indoor), and more than 800 stores. Rental scooters available for those not wanting to walk too much. Transportation provided.

4. October 7, Tuesday - Ukrainian Cultural Heritage Village

10:00 AM departure. Located 50 km. east of Edmonton, the village tells the story of Ukrainian immigrants and their settlement in east-central Alberta, 1892 - 1950's. Role players in more than 30 historic buildings. Gift shop. Admission charge. Lunch charge.

5. October 8, Wednesday

On your own. Suggested interesting attractions: the provincial museum (includes a 'bugroom'); Edmonton Space and Science Centre, with exhibits and IMAX theatre; Muttart Conservatory of 4 glass pyramids showing vegetation of a) tropical rainforest, b) boreal forest, c) desert plants, and d) seasonal display, gift shop and cafe.

For further information, please contact:

Dr. Kay Ball
8108 138 Street
Edmonton, Alberta
T5R 0C9



**La Réunion Conjointe de 1997
de la Société Entomologique du Canada
et de la Société Entomologique de l'Alberta**

*Edmonton, du 4 au 8 octobre 1997
Crowne Plaza Hôtel*

PROGRAMME ASSOCIÉ

Veuillez indiquer quelles activités vous intéressent **sur le formulaire d'inscription.**

1. 4 octobre, samedi

Pour les personnes qui arrivent tôt, voir #5 pour suggestions d'attractions touristiques.

2. 5 octobre, dimanche - promenades des poètes

1:00 - 4:00 PM. Des petits groupes d'artistes donnent de courtes séances au cours de l'après-midi à différents endroits; la plupart lisent leurs propres poèmes. Lieu - Old Stratcona, un quartier historique avec des édifices restaurés (datant de 1891) et plusieurs petites boutiques, cafés et restaurants. Transport fourni. Entrée libre.

3. 6 octobre, lundi - West Edmonton Mall

Après l'ouverture et le symposium plénier. Magasiner à West Edmonton Mall, le plus grand complexe d'amusement et de magasins au monde, incluant des glissoires d'eau, un parc d'amusement, une patinoire intérieure, et plus de 800 magasins. Il est possible de louer une voiturette pour ceux qui préfèrent ne pas trop marcher. Transport fourni.

4. 7 octobre, mardi - Village Ukrainien

10:00 AM départ. 50 km à l'est d'Edmonton, le village raconte l'histoire des immigrants ukrainiens et de leur établissement dans le centre-est de l'Alberta de 1892 aux années 1950. Des acteurs sont présents dans une trentaine d'édifices historiques. Boutique de souvenirs. Frais d'entrée. Frais de dîner.

5. 8 octobre, mercredi

Suggestions d'attraction touristiques: le musée provincial (incluant "bugroom"); Edmonton Space and Science Center avec expositions et cinéma IMAX; Muttart Conservatory, 4 serres pyramidales chacune possédant différentes végétations a) forêt tropicale, b) forêt boréale, c) plantes du désert, et d) une exposition saisonnière, boutique de souvenir et café.

Pour plus d'information, veuillez contacter:

Dr. Kay Ball
8108 138 street
Edmonton, AB
T5R 0C9



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THIRD ANNUAL CANADIAN LINNAEAN GAMES

The ESA-ESC Joint Meeting Organizing Committee is planning the third annual Linnaean Games. The games involve teams of four people competing against each other to answer questions about entomology. They have been a great success in past years. The primary goal is to provide an activity for students at meetings that is both educational and entertaining. The games are named after Carolus Linnaeus, to recognize his contributions to entomology and to reflect the objective of keeping the competition fun. For more information about the history and rules of the games, refer to the **Bulletin of the Entomological Society of America** (now *American Entomologist*), 31(3):5-6.

The preliminary round of the games in Edmonton is scheduled for Sunday, with the time of the finals to be announced at a later date. Subject areas for questions will include: behavior, Canadian entomological current events and history, crop protection, ecology, forestry, morphology, physiology, taxonomy and toxicology. Questions will be presented orally and visually, with the aid of slides.

The Student Affairs Committee invites student members of the E.S.C. to register, either as a team of four people, or as an individual (so we can put you on a team). Depending on the response, there may be space available for a "drop-in" team to be filled at registration. Please send in your response by August 1, 1997.

Linnaean Games Registration Form

Name of Team:

Institution:

Team Members:

.....
.....
.....

OR:

Name of Individual:

Institution:

Please return this form to: Jim Hammond, Dept. of Biological Sciences
University of Alberta, Edmonton, AB T6G 2E9
phone - (403)-492-3080, fax - (403)-492-9234
E-mail - jhammond@gpu.srv.ualberta.ca

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ESA/ESC '97

TROISIÈME JEUX ANNUELS LINNÉENS CANADIENS

Le comité organisateur de la réunion conjointe ESA-ESC organise les troisième jeux annuels linnéens. Le jeu met en compétition des équipes de quatre joueurs qui doivent répondre à des questions d'entomologie. Ces jeux ont eu un grand succès dans le passé. Le but principal des jeux est de donner l'occasion aux étudiant(e)s qui sont à la réunion de participer à une activité à la fois éducative et divertissante. Les jeux sont nommés en l'honneur de Carl von Linné, afin de reconnaître sa contribution au domaine de l'entomologie, ainsi que pour illustrer l'objectif de garder la compétition agréable. Pour plus amples informations sur l'historique et les règles du jeu, veuillez vous référer au **Bulletin de la Société entomologique américaine** (American Entomologist), 31(3):5-6.

La manche préliminaire des Jeux d'Edmonton est prévue pour dimanche, la date et l'heure de la finale seront annoncées plus tard. Les questions porteront sur les sujets suivants: le comportement, les événements actuels et historiques de l'entomologie canadienne, la phytoprotection, l'écologie, la foresterie, la morphologie, la physiologie, la taxonomie et la toxicologie. Les questions seront posées sous formes orales et visuelles, à l'aide de dispositifs.

Le comité des affaires étudiantes invite tous les membres étudiants de la E.S.C. à s'inscrire, en équipe de quatre personnes ou individuellement (afin de vous placer dans une équipe). Il est possible qu'il y ait des places disponibles pour former une équipe improvisée au moment de l'inscription. Veuillez faire parvenir votre réponse avant le 1er août 1997.

Jeux Linnéens canadiens: Formulaire d'inscription

Nom de l'équipe:

Institution:

Noms des membres:

de l'équipe

OU:

Nom (personne seule):

Institution:

Veuillez retourner à: Jim Hammond, Dept. of Biological Sciences
University of Alberta, Edmonton, AB, T6G 2E9
téléphone: (403) 492-3080, télécopieur: (403) 492-9234
e-mail: jhammond@gpu.srv.ualberta.ca

Call for Nominations

Achievement Awards Committee

Gold Medal for Outstanding Achievement in Canadian Entomology and The C. Gordon Hewitt Award

Members of the Society are invited to nominate individuals whom they regard as eligible for these awards (for the year **1998**). Nominations should be sent in an envelope marked "Confidential" to the following address:

**Achievement Awards Committee
Entomological Society of Canada
393 Winston Avenue
Ottawa, Ontario
K2A 1Y8**

and should comprise: (1) the name and address of the nominee(s); (2) a statement of relevant achievements; and (3) the name of the nominator and at least one seconder. To be considered by the Achievement Awards Committee, nominations must bear a postmark no later than **December 31 1997**.

The following conditions govern these awards:

1. Outstanding contributions should be judged on the basis of

(a) superior research accomplishment either as a single contribution or as a series of associated endeavours and which may be either in entomology or a related field where the results obtained are of great consequence;

or

(b) dedicated and fruitful service in the fields of Society affairs, research, administration or education.

2. No more than one of each award shall be granted per year but, where circumstances warrant, more than one individual may be mentioned in a single award.

3. Recipients need not be members of the Society providing their contribution is judged to have a major impact on entomology in Canada.

4. The award may be granted on different occasions to the same recipient but for different contributions to entomology in Canada.

5. Nominees for the C. Gordon Hewitt Award must be less than 40 years of age throughout the calendar year in which the award is both announced and awarded.

Comité des décorations

Médaille d'Or pour Contributions Exceptionnelles à l'Entomologie Canadienne et Prix C. Gordon Hewitt

La Société invite les membres à lui faire parvenir les noms des personnes qu'ils considèrent éligibles à ces deux prix. Veuillez envoyer vos nominations (pour l'année 1998) au:

Comité des décorations
La Société d'entomologie du Canada
393 Winston Avenue
Ottawa, Ontario
K2A 1Y8

dans une enveloppe portant la mention "Confidentiel". La nomination doit contenir: (1) le nom ainsi que l'adresse du (ou des) candidat(s) désigné(s); (2) un compte rendu des réalisations pertinentes; et (3) le nom du parrain et celui d'au moins une deuxième personne appuyant la mise en nomination. Pour être acceptées par le Comité, les nominations devront porter un sceau postal d'au plus tard le **31 décembre 1997**.

Les conditions suivantes régissent le choix des récipiendaires de ces prix:

1. Les contributions exceptionnelles devraient être jugées dans le contexte

(a) d'un accomplissement hors pair en recherche, soit comme résultat d'une seule contribution ou d'une série d'efforts reliés et ayant abouti à des résultats de grande valeur. Cette recherche aura été réalisé en entomologie ou tout autre domaine connexe.

ou

(b) de service dévoué et fructueux au profit de la Société, de l'administration de recherche, ou de l'éducation.

2. Chaque prix ne sera décerné qu'une seule fois par année. Cependant, lorsque les circonstances le justifient, plusieurs personnes peuvent collectivement devenir récipiendaires d'un prix.

3. Les récipiendaires ne doivent pas nécessairement être membres de la Société pour autant que l'on juge que leur contribution à eu un impact majeur sur l'entomologie au Canada.

4. Chaque prix peut être décerné plus d'une fois au même récipiendaire mais pour différentes contributions à l'entomologie au Canada.

5. Le candidat désigné pour le prix C. Gordon Hewitt doit être âgé de moins de 40 ans pour toute la durée de l'année au cours de laquelle le prix est annoncé et décerné.

E.S.C. Bulletin S.E.C.
Student Affairs Committee Update

The SAC has completed its work on the "Directory of Entomology Education in Canada", a concise source of information about Canadian post-secondary institutions that offer students an education in entomology. Twenty-six institutions responded either to the original request for information or a follow-up contact by a member of the SAC. The Directory should be available on the Society's home page in June 1997. See elsewhere in this issue for more information.

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

Troy Danyk
Chair, Student Affairs Committee
Lethbridge, Alberta

Directory of Entomology Education in Canada

The Student Affairs Committee (SAC) of the ESC has assembled a Directory of information about schools that offer students an education in entomology. Members of the SAC identified 43 post-secondary institutions in Canada that may teach entomology. English and French versions of a questionnaire were mailed to Department/Faculty Heads/Chairs (or key Professors) at these schools in mid-February 1997. A total of 26 departments or faculties sent information to the Chair of the SAC by May. Schools that did not respond to the initial questionnaire were contacted by members of the SAC and given another chance to submit their material for inclusion in the Directory. Schools that did not respond could not be included in the Directory.

Below is a list of the institutions that offer entomology. The complete Directory (about 50 printed pages) is located in the ESC home page: <http://www.biology.ualberta.ca/esc.hp/homepage.htm>.

British Columbia: Simon Fraser University, University of B.C., University of Northern B.C.

Alberta: University of Alberta, University of Calgary.

Saskatchewan: University of Saskatchewan.

Manitoba: University of Manitoba, University of Winnipeg.

Ontario: Brock University, Carleton University, McMaster University, Queen's University, Sir Sanford Fleming College, University of Guelph, University of Ottawa, University of Toronto.

Québec: Macdonald Campus of McGill University, Université de Montréal, Université du Québec à Montréal, Université Laval.

Nova Scotia: Acadia University, Dalhousie University.

Prince Edward Island: University of Prince Edward Island.

Newfoundland: Memorial University of Newfoundland.

Troy Danyk
Chair, Student Affairs Committee
Lethbridge, Alberta

ENTOMOLOGICAL SOCIETY OF CANADA

FINANCIAL STATEMENTS

DECEMBER 31, 1996

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

Page 1.

**McCay, Duff
& COMPANY**

CHARTERED ACCOUNTANTS

141 LAURIER AVE., WEST
GUELPH, ONTARIO
OTTAWA, ONTARIO K1P 5J3
TEL.: (613) 236-2367
FAX: (613) 236-5041
1 (800) 267-6551

AUDITORS' REPORT

To the Members of the
Entomological Society of Canada.

We have audited the balance sheet of the Entomological Society of Canada as at December 31, 1996 and the statements of revenue and expenditure, equity and changes in financial position for the year then ended. These financial statements are the responsibility of the Society's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Society as at December 31, 1996 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles.

McCay, Duff & Co.

Chartered Accountants

Ottawa, Ontario,
March 6, 1997.

JOHN W. FRANKLIN, C.A.

THOMAS W. HOWARTH, C.A.

BRYAN E. SULLIVAN, C.A.

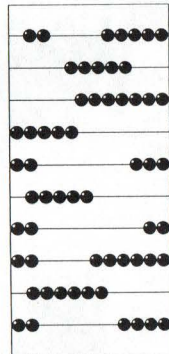
ALBERT G. MUNGER, B.A.M.C., C.A.

BLAIR E. DAVIDSON, B.COMM., C.A.

G. WARREN TRICKLEY, B.COMM., C.A.

ROBERT D. SHANTY, B.MATH., C.A.

CO-SIGNATORY: ELDREN E. MCCONNELL, C.A.



ENTOMOLOGICAL SOCIETY OF CANADA

BALANCE SHEET

AS AT DECEMBER 31, 1996

ASSETS		1996	1995
GENERAL FUND			
CURRENT			
Cash	\$	38,815	\$ 29,030
Accounts receivable		28,369	15,942
Accrued interest receivable		2,402	1,338
Prepaid expenses		<u>6,929</u>	<u>9,867</u>
		76,515	56,177
INVESTMENTS (note 3)		129,675	129,675
INVESTMENT IN BOOK PROJECT (note 4)		<u>79,217</u>	<u>107,546</u>
		285,407	293,398
ENDOWMENT FUND			
CURRENT			
Cash		15,466	22,839
Accrued interest receivable		774	464
Due from General Fund		-	152
Investments (note 3)		<u>49,631</u>	<u>39,860</u>
		65,871	63,315
BUILDING FUND			
CAPITAL ASSETS(note 5)		<u>242,800</u>	<u>242,800</u>
	\$	<u>594,078</u>	\$ <u>599,513</u>
LIABILITIES			
GENERAL FUND			
CURRENT			
Accounts payable and accrued liabilities	\$	9,958	\$ 11,079
Deferred revenue		136,925	136,342
Due to Endowment Fund		-	152
Due to Scholarship Fund		<u>-</u>	<u>79</u>
		146,883	147,652
EQUITY			
GENERAL FUND		138,524	145,746
ENDOWMENT FUND (note 6)		65,871	63,315
BUILDING FUND (note 7)		<u>242,800</u>	<u>242,800</u>
		<u>447,195</u>	<u>451,861</u>
	\$	<u>594,078</u>	\$ <u>599,513</u>

Approved on behalf of the Board:

Governor

Governor

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

ENTOMOLOGICAL SOCIETY OF CANADA
STATEMENT OF EQUITY
FOR THE YEAR ENDED DECEMBER 31, 1996

	<u>1996</u>	<u>1995</u>
GENERAL FUND		
BALANCE - BEGINNING OF YEAR	\$ 145,746	\$ 126,654
Net revenue (expenditure) for the year	(4,976)	<u>24,163</u>
	140,770	150,817
Appropriation to Building Fund	(2,246)	(5,071)
BALANCE - END OF YEAR	<u>\$ 138,524</u>	<u>\$ 145,746</u>
ENDOWMENT FUND		
BALANCE - BEGINNING OF YEAR	\$ 63,315	\$ 57,981
Interest income	4,062	5,334
Page charges and reprints	(1,506)	<u>-</u>
Net revenue for the year	<u>2,556</u>	<u>5,334</u>
BALANCE - END OF YEAR	<u>\$ 65,871</u>	<u>\$ 63,315</u>
BUILDING FUND		
BALANCE - BEGINNING OF YEAR	\$ 242,800	\$ 242,800
Net rental revenue (expenditure) for the year (schedule)	(2,246)	(5,071)
Appropriation from General Fund	<u>2,246</u>	<u>5,071</u>
BALANCE - END OF YEAR	<u>\$ 242,800</u>	<u>\$ 242,800</u>

ENTOMOLOGICAL SOCIETY OF CANADA
STATEMENT OF REVENUE AND EXPENDITURE
FOR THE YEAR ENDED DECEMBER 31, 1996

	Canadian Entomologist		Memoirs and Other Publications		Society		1996		1995	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
REVENUE										
Regular membership	\$ 18,000	\$ 17,670	\$ -	\$ 1,500	\$ 18,000	\$ 17,670	\$ 36,000	\$ 36,840	\$ 38,320	\$ 38,320
Student membership	1,000	1,400	-	-	2,000	940	3,000	2,340	3,100	3,100
Emeritus	-	-	-	-	540	580	540	580	540	540
Subscriptions	106,000	113,161	40,000	44,007	12,000	-	158,000	157,168	131,498	131,498
Reprints	15,000	13,500	-	-	-	-	15,000	13,500	11,388	11,388
Page charges	33,000	31,166	6,750	9,030	-	-	39,750	40,196	27,590	27,590
Back issues	3,500	3,225	-	-	-	-	3,500	3,225	5,148	5,148
Sales of Memoirs	-	-	2,000	2,823	-	-	2,000	2,823	2,416	2,416
Sales of Arctic Arthropods and Bibliography	-	-	-	-	200	30	200	30	295	295
Gain on currency exchange	-	-	-	-	-	472	-	472	18,660	18,660
Miscellaneous	-	-	-	-	4,000	5,445	4,000	5,445	8,421	8,421
Book Project	-	-	-	-	60,000	-	60,000	-	-	-
REVENUE	\$ 176,500	\$ 180,122	\$ 48,750	\$ 57,360	\$ 96,740	\$ 25,137	\$ 321,990	\$ 262,619	\$ 247,376	\$ 247,376
- Carried Forward										

ENTOMOLOGICAL SOCIETY OF CANADA
STATEMENT OF REVENUE AND EXPENDITURE
FOR THE YEAR ENDED DECEMBER 31, 1996

	Canadian Entomologist		Memoirs and Other Publications		Society		1996		1995	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
REVENUE - Carried forward	\$ 176,500	\$ 180,122	\$ 48,750	\$ 57,360	\$ 96,740	\$ 23,137	\$ 321,990	\$ 262,619	\$ 247,376	\$ 247,376
EXPENDITURE										
Publishing and mailing	99,200	112,475	12,600	14,344	500	-	112,300	126,819	85,917	85,917
Reprint costs	8,000	7,859	-	-	-	-	8,000	7,859	5,929	5,929
Bulletin publishing and mailing	-	-	-	-	18,000	16,729	94,270	16,729	18,804	18,804
Salaries and benefits	60,398	60,079	22,124	18,486	11,748	13,864	92,429	92,429	93,056	93,056
Editor's expenses	2,000	2,207	100	-	-	-	2,100	2,207	2,885	2,885
Office	4,600	3,378	2,300	1,689	4,600	3,378	11,500	8,445	9,812	9,812
Professional fees	1,500	1,650	-	-	1,500	1,650	3,000	3,300	3,200	3,200
Prizes, awards, brochure	-	-	-	-	1,200	2,308	1,200	2,308	1,380	1,380
Honoraria	1,209	1,088	-	362	2,416	2,175	4,025	3,625	3,625	3,625
Publications committee	-	-	-	-	2,000	672	2,000	672	1,626	1,626
Support of other organizations	-	-	-	-	1,700	900	1,700	900	1,200	1,200
Annual Meetings:	-	-	-	-	4,000	4,000	4,000	4,000	4,000	4,000
Grant	-	-	-	-	2,000	774	2,000	774	510	510
Honorees	-	-	-	-	-	-	-	-	-	-
Governing Board:	-	-	-	-	2,500	477	2,500	477	2,110	2,110
Interim meeting	-	-	-	-	10,000	6,362	10,000	6,362	7,507	7,507
Annual meetings	-	-	-	-	1,500	-	1,500	-	-	-
Other meetings	-	-	-	-	-	-	-	-	-	-
President's discretionary expenses	-	-	-	-	4,500	-	4,500	-	-	-
Book Project	-	-	-	-	5,000	-	5,000	-	-	-
General (recovery)	-	-	-	-	-	1,163	-	1,163	(2,622)	(2,622)
	176,907	188,736	37,524	34,881	73,164	54,452	287,595	278,069	238,939	238,939
REVENUE (EXPENDITURE)										
FROM OPERATIONS	(407)	(8,614)	11,226	22,479	23,576	(29,315)	34,395	(15,450)	8,437	8,437
Interest on investments	-	-	-	-	12,000	10,474	12,000	10,474	11,601	11,601
Gain on sale of investments	-	-	-	-	-	-	-	-	4,125	4,125
	-	-	-	-	12,000	10,474	12,000	10,474	15,726	15,726
NET REVENUE (EXPENDITURE) FOR THE YEAR	\$ (407)	\$ (8,614)	\$ 11,226	\$ 22,479	\$ 35,576	\$ (18,841)	\$ 46,395	\$ (4,976)	\$ 24,163	\$ 24,163

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

ENTOMOLOGICAL SOCIETY OF CANADA
STATEMENT OF CHANGES IN FINANCIAL POSITION
FOR THE YEAR ENDED DECEMBER 31, 1996

	<u>1996</u>	<u>1995</u>
CASH PROVIDED BY (USED FOR)		
OPERATING ACTIVITIES		
Cash from operations		
Net revenue (expenditure) for the year		
-General Fund	\$(4,976)	\$ 24,163
-Endowment Fund	2,556	5,334
-Building Fund	(2,246)	(5,071)
	(4,666)	24,426
Items not involving cash		
-Gain on sale of investments		
-General fund	-	(4,125)
	(4,666)	20,301
Net change in non-cash working capital balances related to operations		
- (increase) decrease in accounts receivable	(12,427)	15,007
- (increase) decrease in accrued interest receivable	(1,064)	1,414
- decrease in prepaid expenses	2,938	2,022
- decrease in accounts payable and accrued liabilities	(1,121)	(45,472)
- increase in deferred revenue	583	12,892
- decrease in Due to Scholarship Fund	(79)	(710)
	(11,170)	(14,847)
INVESTING ACTIVITIES		
Purchase of investments		
- General Fund	-	(55,000)
- Endowment Fund	(9,771)	(24,000)
Proceeds on disposal of investments		
- General Fund	-	54,000
- Endowment Fund	-	23,000
Increase in accrued interest receivable		
- Endowment Fund	(310)	313
Decrease in Investment in Book Project	28,329	3,313
	<u>18,248</u>	<u>1,626</u>
INCREASE IN CASH POSITION DURING THE YEAR	2,412	7,080
Cash position - beginning of year	<u>51,869</u>	<u>44,789</u>
CASH POSITION - END OF YEAR	<u>\$ 54,281</u>	<u>\$ 51,869</u>
CASH POSITION		
Cash - General Fund	\$ 38,815	\$ 29,030
- Endowment Fund	<u>15,466</u>	<u>22,839</u>
	<u>\$ 54,281</u>	<u>\$ 51,869</u>

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

ENTOMOLOGICAL SOCIETY OF CANADA

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 1996

1. PURPOSE OF ORGANIZATION

The purpose of the Organization is to study, promote and advance the study of entomology through meetings, symposium and the publication of original research results. Entomological Society of Canada is incorporated without share capital under Part II of the Canada Companies Act and is exempt from income taxes.

2. SIGNIFICANT ACCOUNTING POLICIES

(a) Accrual Basis of Accounting

Revenue and expenditure are recorded on the accrual basis, whereby they are reflected in the accounts in the period in which they have been earned and incurred respectively, whether or not such transactions have been finally settled with the receipt or payment of money.

(b) Short-term investments

Short-term investments are recorded at cost which approximates market value.

(c) Capital Assets

Furniture and equipment purchases are expensed in the year of aquisition, except for the building which has been capitalized.

No amortization is being taken on the building.

(d) Volunteer Services

The Organization receives volunteer services, the value of which cannot be reasonably estimated. Therefore, no representation of these costs are reflected in the financial statements.

3. INVESTMENTS

	<u>1996</u>	<u>1995</u>
General Fund		
Bonds, at cost (market value 1996 - \$139,647, 1995 - \$133,599)	\$ <u>129,675</u>	\$ <u>129,675</u>
Endowment Fund		
Bonds, at cost (market value 1996 - \$54,842, 1995 - \$42,863)	\$ <u>49,631</u>	\$ <u>39,860</u>

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

ENTOMOLOGICAL SOCIETY OF CANADA

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 1996

4. INVESTMENT IN BOOK PROJECT

The Entomological Society has invested in the joint project for the publication of "Diseases and Pests of the Vegetable Crop in Canada" in conjunction with the Canadian Phytopathological Society. Both revenue and expenditure are to be shared in an equitable manner. The investment is recorded using the cost method. For the December 31, 1996 fiscal period no accrual was made for sales net of costs as it will be recognized as received. The remaining investment is expected to be recovered over the next few years.

5. CAPITAL ASSETS

	<u>1996</u>	<u>1995</u>
Land and building, at cost	\$ <u>242,800</u>	\$ <u>242,800</u>

6. ENDOWMENT FUND

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

7. BUILDING FUND

This fund was created through an appropriation from the General Fund to recognize the expenses of the building independent of operational expenditures. Prior Board approval has been given to appropriate from the General Fund an amount equal to the current year net expenditure in the Building Fund.

8. COMPARATIVE FIGURES

Certain comparative figures have been reclassified to conform with current year presentation.

ENTOMOLOGICAL SOCIETY OF CANADA
SCHEDULE OF RENTAL REVENUE (EXPENDITURE)
FOR THE YEAR ENDED DECEMBER 31, 1996

	<u>1996</u>		<u>1995</u>
	<u>Budget</u>	<u>Actual</u>	<u>Actual</u>
REVENUE			
Rental income	\$ 6,000	\$ 6,090	\$ 5,000
EXPENDITURE			
Insurance	600	718	571
Property taxes	4,500	4,430	4,456
Repairs and maintenance	1,850	1,413	3,030
Utilities	<u>1,550</u>	<u>1,775</u>	<u>2,014</u>
	<u>8,500</u>	<u>8,336</u>	<u>10,071</u>
NET RENTAL REVENUE (EXPENDITURE) FOR THE YEAR	\$(<u>2,500</u>)	\$(<u>2,246</u>)	\$(<u>5,071</u>)

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

ENTOMOLOGICAL SOCIETY OF CANADA - SCHOLARSHIP FUND
FINANCIAL STATEMENTS
DECEMBER 31, 1996

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

AUDITORS' REPORT

To the Members of the
Entomological Society of Canada -
Scholarship Fund.

We have audited the balance sheet of the Entomological Society of Canada - Scholarship Fund as at December 31, 1996. These financial statements are the responsibility of the Fund's management. Our responsibility is to express an opinion on these financial statements based on our audit.

Except as explained in the following paragraph, we conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In common with many charitable organizations, the Fund derives a part of its revenue from cash donations, the completeness of which is not susceptible to satisfactory audit verification. Accordingly, our verification of this revenue was limited to the amounts recorded in the records of the organization and we were not able to determine whether any adjustments might be necessary to donation revenue, assets and equity.

In our opinion, except for the effect of adjustments, if any, which we might have determined to be necessary had we been able to satisfy ourselves concerning the completeness of donations referred to in the preceding paragraph, these financial statements present fairly, in all material respects, the financial position of the Fund as at December 31, 1996 and the results of its operations for the year then ended in accordance with generally accepted accounting principles.

McCay, Duff & Co.

Chartered Accountants

Ottawa, Ontario,
March 6, 1997.

McCAY, DUFF & COMPANY

CHARTERED ACCOUNTANTS

141 LAURIER AVE., WEST
6TH FLOOR
OTTAWA, ONTARIO K1P 5J3
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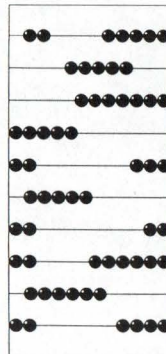
ALBERT G. MONSIEUR, B. ADMIN., C.A.

BLAIR E. DAVIDSON, B. COMM., C.A.

G. WARREN TRICKEY, B. COMM., C.A.

ROBERT D. SHANTZ, B. MATH., C.A.

CONSULTANT - ELDRED E. MCCONNELL, C.A.



ENTOMOLOGICAL SOCIETY OF CANADA - SCHOLARSHIP FUND

BALANCE SHEET

AS AT DECEMBER 31, 1996

	ASSETS	
	1996	1995
GENERAL FUND		
CURRENT		
Cash	\$ 10,576	\$ 18,730
Accrued interest receivable	1,765	1,765
Due from Entomological Society	<u>-</u>	<u>79</u>
	12,341	20,574
INVESTMENTS (note 2)	<u>89,780</u>	<u>79,780</u>
	<u>\$ 102,121</u>	<u>\$ 100,354</u>
INCOME FUND		
SURPLUS		
Balance - beginning of year	\$ 23,977	\$ 23,747
Interest revenue	<u>6,347</u>	<u>9,240</u>
	30,324	32,987
Expenditure		
Scholarship awards and travel grants	6,905	9,000
Service charges	<u>18</u>	<u>10</u>
	<u>6,923</u>	<u>9,010</u>
Balance - end of year	23,401	23,977
CAPITAL FUND		
Balance - beginning of year	76,377	73,955
Donation revenue	<u>2,343</u>	<u>2,422</u>
Balance - end of year	<u>78,720</u>	<u>76,377</u>
	<u>\$ 102,121</u>	<u>\$ 100,354</u>

Approved on behalf of the Board:

Director

Director

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

ENTOMOLOGICAL SOCIETY OF CANADA - SCHOLARSHIP FUND

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 1996

1. SIGNIFICANT ACCOUNTING POLICIES

(a) Accrual Basis of Accounting

Revenue and expenditure are recorded on the accrual basis, whereby they are reflected in the accounts in the period in which they have been earned and incurred respectively, whether or not such transactions have been finally settled with the receipt or payment of money.

(b) Volunteer Services

The Fund receives volunteer services, the value of which cannot be reasonably estimated. Therefore, no representation of these costs are reflected in the financial statement.

2. INVESTMENTS

	<u>1996</u>	<u>1995</u>
Bonds, at cost (market value)		
1996 - \$96,152, 1995 - \$82,617)	\$ <u>89,780</u>	\$ <u>79,780</u>

3. STATEMENT OF CHANGES IN FINANCIAL POSITION

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

McCAY, DUFF AND COMPANY, CHARTERED ACCOUNTANTS

NEWS OF ORGANIZATIONS

International Commission on Zoological Nomenclature

The following Applications were published on 26 March 1997 in Vol. 54, Part 1 of the *Bulletin of Zoological Nomenclature*. Comment or advice on any of these applications is invited for publication in the Bulletin and should be sent to the Executive Secretary (I.C.Z.N.), c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K.

Case 2963 *Roeslerstammia* Zeller, 1839 and *Acrolepiopsis* Gaedike, 1970 (Insecta, Lepidoptera): proposed conservation by the designation of *Alucita erxlebelli* Fabricius, 1787 as the type species of *Roeslerstammia*; and *A. erxlebelli* and *Tinea imella* Hübner, [1813] (currently *Roeslerstammia erxlebelli* and *Monopis imella*): proposed conservation of the specific names by the designation of a neotype for *A. erxlebelli*

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Abstract. The purpose of this application is to conserve the accustomed usage and understanding of the names for two genera of micromoths with wide distributions, *Roeslerstammia* Zeller, 1839 (Palearctic; family ROESLERSTAMMIIDAE) and *Acrolepiopsis* Gaedike, 1970 (worldwide, family ACROLEPIIDAE), by designating *Alucita erxlebelli* Fabricius, 1787 as the type species of *Roeslerstammia*. At present *R. assectella* Zeller, 1839 is the valid type species of both *Roeslerstammia* and *Acrolepiopsis*. It is also proposed that the usage of the specific names of *R. erxlebelli* and *Monopis imella* (Hübner, [1813] (family TINEIDAE) should be conserved by setting aside the only known syntype of *R. erxlebelli*, which is a specimen of *M. imella*, and replacing it with a neotype.

Keywords. Nomenclature; taxonomy; Lepidoptera; micromoths; *Roeslerstammia*; *Acrolepiopsis*; *Roeslerstammia erxlebelli*; *Acrolepiopsis assectella*; *Monopis imella*; Palearctic.

Case 2988 *Euchroeus* Latreille, 1809 and *Chrysis purpurata* Fabricius, 1787 (currently *E. purpuratus*) (Insecta, Hymenoptera): proposed conservation of usage; and *Chrysis gloriosa* Fabricius, 1793: proposed suppression of the specific name

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Abstract. The main purpose of this application is to conserve the name *Euchroeus* Latreille, 1809 for a genus of parasitic cuckoo wasps (family CHRYSIDIDAE), and the specific name of its type species *Chrysis purpurata* Fabricius, 1787. These long used names are threatened by a lectotype designation for *C. purpurata* by L.S. Kimsey (1988); the specimen designated is one of *C. iris* Christ, 1791, and the designation would not only displace the name *iris* but would make *Euchroeus* a junior synonym of *Chrysis* Linnaeus, 1761. The specimen does not accord with the description of *C. purpurata* and it was probably not a syntype; it is proposed that the designation be set aside. A second purpose is the suppression of the

specific name of *Chrysis gloriosa* Fabricius, 1793, a name which has long been misidentified as a senior synonym of *Holopyga amoenula* Dahlbom, 1845 (the type species of *Holopyga*). Another erroneous lectotype designation by Kimsey would make it a junior synonym of *Pseudomalus auratus* (Linnaeus, 1791); since *gloriosa* is in fact probably a senior synonym of a widely used name in some other genus its suppression is proposed.

Keywords. Nomenclature; taxonomy; Hymenoptera; cuckoo wasps; CHRYSIDIDAE; *Euchroeus*; *Euchroeus purpuratus*; *Chrysis gloriosa*; *Holopyga gloriosa*.

The following Opinions were published on 26 March 1997 in Vol. 54, Part 1 of the *Bulletin of Zoological Nomenclature*. Copies of these Opinions can be obtained free of charge from the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K.

OPINION 1862. *Aspidiphorus* Ziegler in Dejean, 1821 (Insecta, Coleoptera): conserved as the correct original spelling, and SPHINDIDAE Jacquelin du Val, [1861]: given precedence over ASPIDIPHORIDAE Kiesenwetter, 1877 (1859).

OPINION 1863. *Sphaerocera* Latreille, 1804 and *Borophaga* Enderlein, 1924 (Insecta, Diptera): conserved; *Musca subsultans* Linnaeus, 1767: specific name placed on the Official List.

OPINION 1864. *Chaetodacus latifrons* Hendel, 1915 (currently *Bactrocera latifrons*; Insecta, Diptera): given precedence over *Dacus parvulus* Hendel, 1912.

PUBLICATIONS

BOOK REVIEWS

Miguel Angel Morón, Brett C. Ratcliffe, and Cuauhtémoc Deloya - 1997 - *Atlas de Los Escarabajos de Mexico (Coleoptera; Lamellicornia). Vol. 1. Familia Melolonthidae. Subfamilias Rutelinae, Dynastinae, Cetoniinae, Trichiinae, Valginae y Melolonthinae.* Sociedad Mexicana de Entomología, A.C., Xalapa, Veracruz. 280 pages. ISBN 9680-7801-00-X (soft cover). Order from Sociedad Mexicana de Entomología, A.C., Km.2.5 antigua carretera a Coatepec, Apartado Postal 63, Xalapa, Veracruz, 91000 MEXICO. \$50.00 U.S. including packaging and certified air mail.

This publication is the first of a proposed series on the scarab beetles of Mexico and includes the six subfamilies listed in the title. The text is entirely in Spanish. For those interested in the scarab fauna of Mexico or the adjacent Central American countries, this work should be a worthy addition to their library, even if they are unfamiliar with Spanish. Most genera are illustrated and all of the known species for each genus are listed. The many excellent black and white illustrations, colour illustrations (of varying quality), lists of all species known to occur in Mexico and up-to-date literature citations make this a useful reference. For those with some familiarity with Spanish the descriptive text for the subfamilies, genera and many of the species is very informative and allows for the identification of many of the more distinctive forms, even though keys are lacking. The format of the work is very good and the contents justify the designation of "atlas."

As with any extensive work, there are occasional errors and places where improvements could be

made. A few references mentioned in the text are omitted in the literature cited, and there are very few other omissions, as on page 188, the author of *Amithao haematopus* is lacking.

Some additions could add to the usefulness of this project. Throughout the book there are tables listing tribes, genera and their included species. In large genera such as *Diplotaxis*, *Euphoria*, etc., the author is given for each species, and the state in which it occurs is listed. In other cases, tables listing small genera may include the species without the author of the species name or the range. Having uniform tables, listing the author, year of description, and range would vastly improve the usefulness of the series without adding greatly to the effort needed, since the authors of the atlas, I am certain, already have this data at hand.

While some improvements are possible, the publication is a major accomplishment that will simplify the identification of the groups covered for Mexico and adjacent regions. For those interested in beetles and particularly for those working with scarabs, either systematically or ecologically, I can recommend it. It is good value for the money.

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Hardwick, David F. 1996. *A Monograph to the North American Heliothentinae*; 281 pp. + 25 colour plates. Price: Canada: soft cover: \$70. + \$10. shipping; hard cover: \$95. + \$10. shipping. Published privately by the author; available from: Ms. Julia Hardwick, 535 Highland Ave., Ottawa, Ontario K2A 2J8

The Heliothentinae are a group of colourful little moths that constitute a subfamily of the Noctuidae. The subfamily reaches its greatest diversity in the deserts of western North America. Adults can be nocturnal or diurnal, depending on species, and are often found resting on the flowers of their foodplants. Larvae usually feed on the flowers or seeds of their foodplants.

The monograph includes a treatment of the heliothentine fauna of Canada, the U.S.A., and Mexico. The flight period, taxonomic status, food plants, and distribution of the 147 recognized species are discussed. The adults of all species and mature larvae of over half of the species are illustrated in colour. Eight new species are described, 23 lectotypes are designated, and 40 nominal species are relegated to the synonymy. Lists of valid species and their synonyms and heliothentine foodplants are included. When known, the life history and immature stages are described. The monograph does not provide distribution maps, a key to the species, or a phylogenetic analysis.

The monograph is published privately by the author and is available in hard cover and soft cover formats. The quality of the binding in both formats is excellent; however, I find that the cover of the soft cover version is a little thin. The hard cover version is a beautiful book and well worth the extra money.

Until now there has been no comprehensive treatment of the subfamily. In addition to a taxonomic revision, Dr. Hardwick has provided us with an invaluable guide to the biology and identification of the North American Heliothentinae. I have only two minor criticisms: the distribution information is rather vague (dot maps would have greatly enhanced the publication), and keys to the identification of the adults and possibly the larvae would have been useful. The 7" x 10" format and extensive use of high-quality colour plates makes this book a valuable field-guide as well as a definitive scientific work.

E.S.C. Bulletin S.E.C.

Both amateur and professional lepidopterists with an interest in the Noctuidae will want this monograph on their bookshelves. Dr. Hardwick should be congratulated for his efforts.

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NEW TITLES

- 1) **Crop Protection Compendium: Module 1.** This CD-ROM provides detailed, illustrated data on: 1000 major pests and their natural enemies, many of global importance; specific emphasis on South-east Asia and Pacific; includes diseases and weeds; 150 crops of the world; 150 countries of the world. For more information please contact CAB International, 198 Madison Avenue, New York, NY 10016, U.S.A. Tel 212-726-6490; FAX 212-686-7993; e-mail *cabi-nao@cabi.org*.
- 2) **The Moths and Butterflies of Great Britain and Ireland - Volume 3** (Yponomeutidae to Elachistidae). This volume has just been published in hardback, and will appear soon in paperback. Anyone wishing to review the book and thereby obtain a free copy can contact the Chair of the Publications Committee, Sheila Fitzpatrick, at *fitzpatrick@em.agr.ca* or 604-796-2221 x 208.
- 3) Intercept Limited announces two new titles: **Agricultural Zoology Reviews, Volume 7**, and **Pest Management in the Subtropics**. For more information, e-mail or phone S. Fitzpatrick (above) and she'll send you a photocopy of the promotional brochure.

Any Interest in "Odonata of Canada and Alaska"?

"The Toronto Entomologists' Association announces that it is preparing to REPRINT the 3-volume set *The Odonata of Canada & Alaska* by Walker & Corbet and is interested in gauging the interest of potential buyers before reprinting. This is NOT a photocopy but a true reprinting - the interior pages are the same quality as the original book, on acid-free paper; the cover is a deluxe-quality hardcover but is not the same as the original. The cost will be in the range of \$220 Can. (\$165 U.S.) for the 3-volume set. If you have an interest in purchasing these books, please reply to T.E.A. c/o Alan Hanks, 34 Seaton Drive, Aurora, Ontario Canada L4G 2K1, (905) 727-6993; or e-mail to nmg.vanderpoorten@sympatico.ca"

PERSONALIA

MARITIME ROOTS HERITAGE LECTURE

Joint Annual Meeting
Entomological Society of Canada - Acadian Entomological Society
Fredericton, N.B., 7 October 1996

by Douglas C. Eids and "Company"

I am honored to have been asked to give the Heritage Lecture this year, although I suspect it has something to do with my age. They overlooked the fact that, as one ages, memory is the second thing to

go. To remedy the memory problem and to make this Lecture more interesting, I have consulted five people and asked each one to speak about a Maritimer who made major contributions to that which we call our heritage. The five speakers have themselves made important contributions to our branch of science and to our heritage.

The accomplishments of the pioneers we will hear about are well documented. We hope to give you fleeting glimpses of these people as interesting personalities, and of the times and circumstances in which they worked - a lighter look.

First, to set the stage, I will give you a brief outline of the development of entomology in the Maritimes. I say the Maritimes, because Ray Morris gave an excellent account of the early history of entomology in Newfoundland and Labrador at the 1989 meeting (Bull. ESC 22:50). Maine, which is an integral part of the area of the Acadian Society, has also been left out only because this is a Canadian Society meeting. Maine's entomological history, particularly as it relates to coniferous forest, potatoes, and blueberries, parallels that of the Maritimes very closely.

Entomology in the Maritimes.

The earliest entomological activity in the Maritimes, as elsewhere, was amateur collecting. Most of the collections were sent to Europe and information is sparse. The earliest documented activity I can find is of a Lieutenant Redmond, who collected insects, mostly Diptera, in Nova Scotia about 1830, which were deposited in the British Museum. Not until 1864, did Thomas Belt publish a list of butterflies observed in Nova Scotia in the Transactions of the Nova Scotia Institute of Science. Other amateurs of the late 19th century, and into the next, were Andrew Downes, Lucy Eaton, Matthew Jones, Harry Piers and Arthur Silver in Nova Scotia and William McIntosh of the New Brunswick Museum. The most active of them all, seems to have been Joseph Perrin of McNabs Island in Halifax Harbour. He was an active amateur from the early 1890s until 1936 who contributed to the fledgling Canadian National Collection and also participated in some of the early scouting for invading brown-tail moth.

With their thriving maritime trade the Maritimes in particular were subject to invasions of alien plants and soil insects. For example, of 32 species of composite plants growing in the vicinity of St. Andrews N.B. in 1907, 24 were introductions from Europe. Ships' ballast deposited on the shores was a major source of introductions. Others hitchhiked in cargoes, personal chattels, stowed away, or were deliberately introduced. Both alien and native species expanded their ranges as land clearing created suitable habitat.

Colorado potato beetle outbreaks first occurred in Nova Scotia in 1882, when for the first time government authorities played an active role in organizing control of a pest. Before that farmers were pretty much on their own, although some interest in insect control was shown by the N.S. Journal of Agriculture, founded in 1865. The first instruction in entomology was probably that in 1885 by Prof H.W. Smith at the Normal School in Truro. A School of Agriculture was established in Truro in 1888, the predecessor of the Nova Scotia Agricultural College, which has served the Maritime Provinces since 1905.

The brown-tail moth was the alien invader that led to the establishment of federal laboratories at Bridgetown N.S. in 1911 (moved to Annapolis Royal in 1915 and to Kentville by 1952) and at Fredericton N.B. in 1912. Many other introductions: gypsy moth, San Jose scale, European cornborer, balsam woolly aphid, European spruce sawfly and many others; adaptation of a *Rhagoletis* on hawthorn to become the notorious apple maggot; head-to-head competition with spruce budworm to harvest New Brunswick soft-

wood, led to rapid growth of entomological activity. The search for parasites and predators was intensive, particularly because of the alien pests, and was largely responsible for the early development of this branch of entomology in Canada. The need for strict quarantine in the Maritimes to prevent further introductions led to the formation of the Plant Protection Branch of Agriculture Canada. The laboratory at Charlottetown, P.E.I., was established by Fred Cannon in 1937, the Island Province having been served before that from Fredericton.

Among the early workers were Robert Matheson at Truro, J.D. Tothill, R.P. Gorham, and L.J. Simpson at Fredericton, and George Sanders, Arthur Kelsall, Alan Dustan, and Fred Gilliatt at Annapolis Royal. Many went elsewhere to establish illustrious careers: Matheson to Cornell, Tothill to the British Colonial Service, and Dustan to the Field Crop Unit in Ottawa. Indeed a veritable exodus involved J.M. Swaine, Ed Reeks and Malcolm Prebble to the Forest Biology Division, Ottawa, W.N. Keenan founder of the Plant Protection Branch in Ottawa, Edna Mosher of the University of Illinois, A.B. Baird a father of modern biological control at the former Belleville Parasite Lab, McBain Cameron first director of the Insect Pathology Research Laboratory at Sault Ste. Marie, H.G. Crawford, Dominion Entomologist, G.G. Dustan at Vineland, L.G. Saunders at the University of Saskatchewan, Jimmy Marshall at Summerland B.C., and many others. I have dug rather deeply into the past such that, to my knowledge, only three of the people I have mentioned are still living. The recent past is more familiar.

At this point I would like to introduce all five of my collaborators all of whom are still living, and will continue this Heritage Lecture without interruption from me.

First is **Dr. M. Ellen MacGillivray**. In her career with Agriculture Canada at Fredericton, Ellen became a world authority on aphid taxonomy, and made many contributions in pest management, particularly of aphids and plant viruses in potatoes. For her scientific contributions she was awarded the DSc (*honoris causa*) by the University of New Brunswick in 1981. Ellen was President of the ESC in 1976-77, and has served on many of its committees. She retired in 1980. Ellen will tell us about her friend and mentor **Jean Adams**, a leader in a then almost exclusively male profession.

Second is **Dr. George M. Strunz**. George is a natural-products chemist and an invaluable member of the Forest Pest Management team at Canadian Forest Service Atlantic in Fredericton where, unencumbered by entomological dogma, he brings a unique perspective to entomological problems. George will talk about **Dr. R.E. Balch**, with whom he shared many interests, not the least, a strong interest in the visual arts.

Third is **Dr. Vernon R. Vickery**, Emeritus Curator of the Lyman Entomological Museum and Laboratory on the Macdonald Campus of McGill University. Vic is a world authority on Orthoptera, on which he has and still is producing stacks of publications. He is an Honorary Member of the Acadian Entomological Society and a former Editor of the Canadian Entomologist. As a native Maritimer and a longtime "Mac" staffer, Vic knew **Dr. W.H. Brittain** well. He has consented to share some of his observations with us.

Our fourth speaker is **C. Roger MacLellan**. Roger retired from Agriculture Canada, Kentville, Nova Scotia, in 1978, and again in 1983 from Insect and Mite Monitoring Service, Kentville, of which he was a founding partner. Roger was a member of **Allison D. Pickett's** team during its holistic study of the ecology of apple orchards and their pests. In other words, he was there when IPM was invented. Some of us would have killed for such a privilege. Roger was made an Honorary Member of the Acadian Entomological Society and of the Nova Scotia Fruit Growers' Association for his part. What was it like to

work with Pickett? Roger knows.

Finally, **Edward G. Kettela**, Project Leader for Integrated Forest Pest Management with the Canadian Forest Service Atlantic, will tell us about **B.W. Flieger**, applied pest manager, and one of the most colorful characters ever to be involved in entomology in the Maritimes. Ed knew him well, having been involved in the same line of work from the research and monitoring side. Ed hardly lacks color himself. I think he knows everybody ever involved in forest pest control, what is going on wherever, and where to scrounge the resources to get things done. A master storyteller, we'll save him until last.

Jean Catherine Robertson Burnham Adams

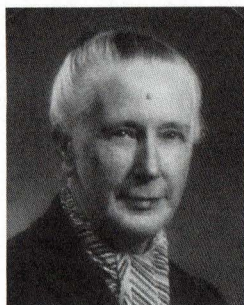
1913 - 1994

by M. Ellen MacGillivray

It is fitting that Dr. Eidt wished Jean Adams to be included in this heritage lecture. In 1945 she was involved with the successful revitalization of the Acadian Entomological Society and served as Vice President. It was she who reviewed the history of the Acadian Entomological Society for its golden anniversary in 1965 (*Atlantic Advocate*, August 1965, pp. 38-39,41,43).

In private life Jean had many interests: her garden, TV hockey, the Toronto Maple Leafs, and Star Trek. She seldom missed TV coverage of space flights often bringing her portable to the office.

She devoted herself tirelessly to the community which she loved. She was a charter member of the Fredericton Tree Commission in 1952 and served the city as an alderman for eight years (1956 to 1963) and as Deputy Mayor for one year. For many years she chaired the Planning Advisory Committee of Greater Fredericton during which the first long term plan for the City was conceived.



But that's not all: she served on the Board of the Victoria Public Hospital, and on the advisory council of its School of Nursing for several years from its beginning in 1968. She was a lay member of the New Brunswick Registered Nurses Association, a charter President of the Fredericton Business and Professional Women's Club and later President of the New Brunswick Federation of Business and Professional Women's Clubs. Jean was a member of Fredericton Heritage Trust, the Conservation Council of New Brunswick and the Fredericton Society of Saint Andrew, one of its first female members. She served as President of the Fredericton Council of Women and was a charter member of the Fredericton Library Board, the York Regional Library, and the Provincial Library Council. In 1979 she received the Fredericton Chamber of Commerce Distinguished Citizen Award for service to the Community.

For those who did not know her she belonged to the era of Baird, Balch, Crawford, Dustan, Keenan, Maxwell, Pickett, Ross, Seamans, and Simpson. Although younger, she was one of them. Barney Flieger was a close friend to her and to her husband.

Jean was born in Fredericton in 1913. She was proud of her Scottish ancestors who settled in the highlands of the upper St. John River Valley in the 1870's and survived, although ill prepared, the rigors of their first winter. As you will see, Jean too was a survivor.

In the early years of the great depression, money was scarce. With the help of a Fredericton Society of Saint Andrew Scholarship and student employment she graduated in 1935 from the University of New Brunswick with a BA degree and a major in Biology. She had to walk to classes almost the entire length of Fredericton.

Jean's interest in entomology began when she was a student, like so many others, with her first summer job. She often recalled, with a smile, how as an innocent student she knocked politely on the front door of the Entomological Laboratory on the University of New Brunswick campus to report for work. At that time the laboratory housed Field Crop, Forest and Fruit Insect Investigations. Her first assignment as a student was counting midges in clover blossoms for R.P.Gorham. R.P. himself could be considered a hermit figure, a demanding supervisor prone to depressions which could be frightening to a young student.

Later, Jean became involved in the early research on aphids infesting potatoes. At that time, potato leaf roll disease was causing potatoes to "run out" and there was limited information about the relationship of the aphid vectors and disease transmission. Little was known about the biology of the aphids.

During her summer employment she developed many interests in natural history and recalled the wonderful canoe trips up the Nashwaak River collecting dragonflies with entomologist Carl Atwood, the father of Canada's outstanding author, Margaret Atwood. Jean was Margaret's babysitter.

Jean was invited to continue her studies in biology at the University of Maine, Orono, and was awarded a scholarship for Maritime students. There she received her Master's degree in 1936. While at Orono, she came under the influence of Dr. Edith M. Patch who at that time was one of the world's most outstanding aphid biologists and systematists, and the first woman president of the Entomological Society of America. Although Dr. Patch was small in stature she was a strong determined woman, much admired by Jean for her leadership and philosophy of research and life. It was at that time that strong relationships were developed between the Maine and New Brunswick potato-aphid-virus researchers.

In 1937, Jean discovered colonizing green peach aphid, *Myzus persicae* on pin cherry and choke cherry. *M. persicae* is now known to be the primary vector of potato viruses. Dr. Patch coached Jean in aphid identification and in 1938 Jean published the first list of aphids of the Maritime Provinces.

Jean continued her research at the University of Toronto while working towards a doctorate which, as it turned out, she was too busy to complete. On her return to Fredericton she did not rejoin Field Crop Insects but became part of the staff of the Plant Pathology Laboratory located at the Experimental Farm. The year was 1941 and she tried to enlist but as an Agricultural researcher she was frozen in her job. Later in the year she married Nelson Adams, a young naval officer. To do this she required permission from her "Ottawa" bosses and was given notice that there would be no further advancement for her. A woman in the Civil Service was one thing. A married woman was a different kettle of fish!

Her research on the potato aphids expanded to the aphid-host relationship and the possibility of breeding potato varieties resistant to aphids. This concept received little support from the plant breeders. Soon after the conclusion of World War II, she co-operated in a preliminary study with Dr. George Stirrett on the control of aphids on potatoes using DDT. This study was continued with Pete Matthewman in the Woodstock area of Carleton County making use of several students who later would become part of her research staff.

In 1946, after the death of Mr. Gorham, Jean was appointed Officer-in-Charge, Field Crop Insects

and had the onerous task of bringing together the staff and research of her predecessor (aphid trapping, vegetable insects) along with her own research and summer staff.

Being a married woman in the federal service placed even more pressure on her to succeed. This was also the era of veterans' preference. For three more years, this lady administered an office in Fredericton and directed research there and at a field station in Woodstock sixty miles away, commuting by bus. To continue this research and to avoid the political patronage interference common to Carleton County, she arranged the purchase of property close to the Experimental Farm.

In the meantime the summer students, after their graduation from University, became part of her staff. She co-ordinated their research to include studies in potato insect susceptibility, aphid biology and systematics, virus vector relationships, and potato insect control. In 1950, the Field Crop Insect Unit was moved to the Experimental Farm where, for nine more years, she and her staff operated out of the header-house of a new greenhouse built under her direction. She was a good administrator and research director, protective of her staff, always ready to listen to their problems, research and personal, tolerant of their idiosyncrasies, outspoken, but kind.

In 1959, when Science Service Laboratories were consolidated with Experimental Farm Services into the Research Branch, Jean was invited to resume her own research. This is a polite way of saying that those persons who had administered laboratories under Science Service (Adams, Maxwell and MacLeod) came under the supervision of a PhD still wet behind the ears. Fortunately, with her proven determination, Jean was able to develop a program and continued her research for another seventeen years. Several times she considered returning to university to finish her graduate studies.

Her first investigation after her administrative career was a study of the affect of herbicides on grain-infesting aphids and their coccinellid predators. It was no easy task for a woman now in her late forties to start over again. She had assigned all the choice research projects to her former employees.

Jean was especially interested in the role of salivary enzymes and their relationship to aphid feeding, virus transmission, and potato response. She succeeded in modifying a sophisticated electronic method for measuring aphid feeding and applying it to determine the acceptance (susceptibility) of the potato to the aphid's feeding. She believed that the acceptance-rejection response held great promise for genetic application and the incorporation of resistance into potato varieties, which ultimately could lead to reduced use of pesticides and less plant damage by aphids and the virus diseases they carry. Even in the late 1960's the plant breeders had little interest in her proposals. Then, their response was that insecticides were available to look after the insect problems.

Jean's contribution to aphid research was recognized internationally. But the highlight of her career came in 1975. All of Canada recognized her greatness when she was chosen, with eighteen other women, to be honoured for her work by the National Museum of Natural Sciences as its contribution to International Women's Year.

Jean's husband, Nelson, is a graduate in Forestry from the U. N. B. Throughout their married life he shared her interest in natural history and encouraged her to pursue her research and civic responsibilities. They had no children but they indulged their nephews and nieces.

Jean Adams was a strong advocate of women's rights and equal pay for equal work. Several times she, with other Business and Professional Women's Club members, approached the provincial government

of Hugh John Flemming on this issue. She did not consider herself a feminist but believed that everybody should be respected as a person and should be allowed to perform at their own level of competence. Even with the discrimination shown her, I'm not sure that she would accept the principles of today's affirmative action.

She survived the system without rancour and has left a legacy on which many researchers have built their own careers. Despite being frozen in her job, despite warnings of no promotions after marriage, despite giving up her research to administer over twenty employees and a research farm only to be returned to research and directed by those she previously directed, she persevered. Her successful accomplishments in an area of research where few women had previously entered, places her among the pioneers of successful female scientists.

Reginald Ernest Balch

1894 - 1994

by George M. Strunz

Members of the Entomological Society of Canada will associate the name R.E. Balch with his definitive studies on the balsam woolly aphid and its effects on balsam fir, as well as his outstanding contributions to the ecology and biological control of the European spruce sawfly.

Indeed, one cannot talk for long about Reg Balch without referring to his career as a visionary scientist and science administrator, but I would like to focus on some of the other facets of his life that may not be so familiar to the present generation of entomologists.



Reg was born in England in 1894, and received his basic schooling there. His lifetime spanned close to one hundred years, and one of his early memories was of seeing Queen Victoria in a carriage drawn by four horses in stately procession down London's Strand. As a six or seven-year-old, he was bitterly disappointed, less by her somewhat unprepossessing appearance than by the fact that she was not wearing a crown which, he felt, every self-respecting monarch ought to do!

Reg Balch came to Canada in 1913, planning to try his luck at farming, but fulfillment of this ambition was interrupted by the outbreak of World War I and, in 1914, he enlisted in the Canadian Field Artillery because, as he explained, he liked horses. After serving as driver and gunner, he was "promoted" to the rank of "Supernumerary Acting Bombardier Without Pay!" Although generally reticent in public (and private) about his experiences during the war, which included three years enduring the horrors of the Front in waterlogged, muddy, rat and lice-infested trenches, he occasionally could be persuaded to reminisce about this period of his life as he was when, in 1990, he gave an interview on the subject with Halifax artist Geoff Butler. This interview was recorded on film, along with archival footage, in a documentary entitled "Where Duty Leads", produced and directed by Angela Baker with National Film Board involvement. In the film, Balch recalls that "The High Command was, to us, something of a mystery. We hardly ever saw a general..." although he remembers he was "startled by one in the trenches on two occasions". He remembers the occasion when his unit was reviewed by Field Marshal Haig, who left little inspiration but the recollection of "beautifully polished boots and well-cut riding breeches". Lord Byng, on the other hand, with his concern for the men's conditions made a better impression.

His experiences at the Front, as a young man, had a profound influence on Reg's feelings about war

and society, and his own interactions with others as well as with his surroundings. He emerged, as a convinced humanist and pacifist, with the conviction that "aggressive species are a misfit in Nature's Scheme... The species that survive" he says, referring to Darwin, "have been those which could adapt to their environment and live in harmony with the other species that shared their environment." It is likely that his wartime experiences kindled the first stirrings of his consciousness of "the mutual relations between organisms and their environment". These ideas were to occupy a central position in his philosophy of life and his work, and crystallized into a form lucidly accessible to the layman, in his five half-hour lectures collectively titled "The Ecological Viewpoint", broadcast on the CBC Radio "University of the Air" series in 1965. The series was published by CBC and has been through at least three printings.

He was demobilized in 1919 with a gratuity of \$500, which was used towards beginning his post-secondary education at the Ontario Agricultural College (now a college of the University of Guelph). After graduating in 1923, he held a number of positions, including fire-ranger in Northern Ontario and then research assistant to the renowned American entomologist F.C. Craighead, "a splendid fellow". These influences, his inquiring mind and his love of the forest were inevitably directing him towards the distinguished career in forest entomology that he went on to pursue. He was employed as a forest entomologist with the US Department of Agriculture while completing his requirements for the MS degree which was awarded to him by the State University of New York at Syracuse in 1928.

In 1930, Reg Balch and his wife, Martha, moved to Fredericton, when Reg accepted an appointment as Officer-in-Charge of the Dominion Entomological Laboratory (later the Forest Biology Laboratory).

During his tenure of this position from 1930 to 1959, he conducted, directed, and fostered work that led to a fresh approach to the study of population dynamics of forest insects and to recognition of the importance of insect diseases as mortality factors. The fact that some streets in Fredericton are still graced by magnificent elm trees, more than 100 years old, can be attributed to Reg's success in persuading the City of Fredericton to take vigorous action to minimize, by sanitation measures, the effects of the Dutch elm disease epidemic that swept eastern North America, reaching the Maritimes in the 1960s. He was awarded the PhD degree by the State University of New York at Syracuse in 1948.

His passion for science made him, during the 1930's, an active participant in Fredericton's Science Club. Other members at the time included his friends, University of New Brunswick Professors Frank Toole and Bryan Priestman. This association brought him into contact with notable scientists such as Julian Huxley and Linus Pauling. The general concurrence of philosophy, political views and interest in science of Toole and Balch with those of Pauling, and their mutual enjoyment of good discussion, evolved into a cordial friendship.

Reg's other major interests led him to be a participant in the Canadian Institute of International Affairs, and to be an enthusiastic supporter of New Brunswick artists: He counted among his close friends the eminent potters Kjeld and Erica Deichmann, the painters Lucy Jarvis, Bruno and Molly Bobak, and others. As a gifted and sensitive artist himself, with the camera as his chosen vehicle for expression, it was natural that he should enjoy the company of other artists.

Photography became an important part of Reg's life and, in later years, while he always considered himself an amateur, his camera became almost as much a part of him as his ever present pipe! Harold Hathaway, in his preface to Reg's book of photographs, *Celebrations of Nature*, published in 1991 when he was in his mid-nineties, quotes him, "The part of photography I enjoy best is carrying a camera, look-

ing for pictures. You look more closely at the world around you and your eyes are opened to much of beauty and interest that would otherwise go unnoticed." He had a special intuitive gift that enabled him to recognize subjects that he could transform into beautiful and evocative images. He preferred to work with black and white film, which may have been a subconscious form of abstraction, but more importantly allowed him in his darkroom to process the film under conditions where he could himself exert some control over the developing image. Some of his pictures have been published in professional photography journals, and his book, *Celebrations of Nature*, was preceded by an earlier collection, *A Mind's Eye*, in 1985.

Reg has received a number of high honours for his contributions to science and society from academic, professional and civic institutions: Lists of these have been compiled elsewhere.

I first came to know Reg and Martha, and their son, Norval and daughter, Cynthia, shortly after my arrival in Canada as a graduate student in 1959. Two or three years later, I became one of a succession of privileged graduate students from overseas to take up residence in the back room of their home at 102 Alexandra Street. This led to development of a warm friendship between the Balches and, eventually, three generations of my family, after they visited and travelled with my parents in Ireland. Some of my happiest times as a young man were spent with Reg and Martha at their beloved camp at French Lake. Reg was proud that his woodlot contained trees and plants belonging to every species growing in New Brunswick, and I learned much from them about the life of the woods.

Until well into his nineties Reg was in excellent physical condition. Indeed even in his eighties he could paddle a canoe or swing an axe as well as anyone I knew. When chopping wood, to make up for his relatively slight stature and to give the axe more momentum, he developed a technique which involved performing a little jump or hop as the axehead approached the end of the down-swing. I am not sure of the physics involved, but the technique was certainly effective for splitting large logs!

Although Reg had for some time been retired from the Forest Biology Lab by the time I joined the Canadian Forest Service in 1967, he was still something of a legend around the Lab, and anecdotes about him (serious and lighthearted, sometimes a little irreverent) were abundant.

I have some glimpses of Dr. Balch, as seen by some of the people who worked with him in later years, that I would like to share with you. To my knowledge, he was the only Director of the Forest Biology Laboratory (now called Canadian Forest Service, Atlantic) to continue his research actively while administering the business of the Laboratory. It is fair to say that of all the people to occupy the Director's Office in the past 60 years he was among those regarded by Scientific staff with the greatest respect (and a rather deferential affection). Little wonder, with his personal charisma and his liberal and enlightened philosophy on science administration! Not that he ran a slack ship by any means, indeed there were quite a few of his colleagues who were slightly in awe of him!

There was the time that a former entomologist colleague arrived late for work to find that someone had placed a rather ordinary insect, perhaps a house fly, on his desk, along with a note asking for its identification and bearing the initials R.E.B. The scientist could not understand why a renowned entomologist like his boss would not recognize a common fly, so assuming that there must be something special about it got out all his books and his microscope and became more and more flustered as he attempted to solve the mystery. Finally, he knocked on the Director's door, timidly and apologetically entered and, redfaced, went to great lengths to explain that, without knowing where and when the insect had been collected and from what host etc, it would be very hard to do an unambiguous identification. Reg heard him out patient-

ly, looked at the fly and then, suppressing a grin with difficulty said addressing him, as was his custom, using his surname, "I do believe, _____, that someone is pulling your leg!"

Now Reg was probably as good a driver as anyone, attested by the fact that, to my knowledge, in many years driving, he never had a serious accident. Nevertheless, as a keen observer of birds and wildlife and as a wonderful photographer, he occasionally had a tendency, that some of his passengers found a little unnerving, to direct his attention from the road to some rare species or object in the surrounding countryside. The story goes that driving his colleague Ed Reeks, on a field trip somewhere, he rounded a bend and entered a picturesque, undoubtedly photogenic, covered bridge at the same moment that a hay-wagon entered the bridge at the other end. They emerged moments later, as in the old movies, with the lab car entirely covered with hay, whereupon R.E., with his characteristic sang-froid, commented nonchalantly "That was rather close wasn't it Reeks". As this story presumably originated with Reeks himself, we are not told how long it took him to regain his ability to speak!

Returning from one of his field trips on another occasion with Murray Neilson and Dick Clark, the trio was approached on the train platform at Fredericton Junction by a drunk waving a bottle of rum. The stranger proffered the bottle and was very insistent that they should all join him in a drink. Murray and Dick looked towards their boss for guidance as to how to handle this delicate situation and Reg, as a gentleman, was most polite in refusing the dubious bottle. The drunk looked at R.E.'s healthy ruddy complexion (his natural somewhat rubicund coloring augmented by a slight sunburn) and said "C'mon now. I know you'll have one. Yer nose didn't get that way sniffing roses!"

I have felt it not unfitting in this brief sketch of Reg's life to refer to a few incidents associated with his later professional career that would have made him chuckle. Others have spoken and written more eloquently than I could about his contributions as a clear-sighted, respected scientist, humanist, philosopher, artist, family member, and friend. There is not one of us who knew him whose lives have not been affected and enriched by our interactions with Reg, and we all have a wealth of our own special memories of these interactions that will always stay with us. "We shall not see his like again"

William Harold Brittain

1889 - 1971

by Vernon R. Vickery

William Harold Brittain was an unusual man, a man of many talents, a man very much at home in a group of people, yet more at home when alone surrounded by the solitudes of nature.

He was born in Fredericton, New Brunswick, on the 20th of September, 1889, son of Dr. John and Charlotte Brittain. They had eight children, five daughters and three sons. Billy was the second youngest. All of his early schooling was in Woodstock, N.B., where his father was a teacher but he went to Saint John for High School.

In 1907 Dr. John Brittain was appointed Professor of Nature Study at the newly opened Macdonald College. He also taught English. Billy was 17 when the family moved to Ste-Anne-de-Bellevue, Quebec, and he enrolled in the first class. He specialized in entomology and plant pathology, graduating in 1911, the first graduate of Macdonald College as there was no one in the class



whose name began with the letter A. He was awarded a gold medal for highest standing.

He worked a short time at the College and a year in Ottawa before going to British Columbia as Provincial Entomologist. About a year later he left to fill the equivalent office in Nova Scotia. Some westerners may find that hard to accept, but the ties of Maritimers to their roots has always been strong, apparently more so than in those from other parts of the country. Dr. Brittain once remarked to me that "in any gathering there should be at least one Maritimer to leaven them".

He managed to get enough time off to obtain his Masters and PhD from Cornell University. He married Mary Cruickshank in 1918. It was during his stay in Nova Scotia that he and others initiated the Entomological Society of Nova Scotia, now the Acadian Entomological Society. While he remained in Nova Scotia he served in one AES office or another nearly the entire time. The Proceedings of the Society from 1915 to 1925 contain 28 papers of which he was author or coauthor. His work on insects of Nova Scotia was outstanding. Among his other activities he made an around-the-world tour on behalf of a pesticide company. When he left Nova Scotia, the Society stagnated and ceased to exist, being revived only in the mid 1940s. He left because the government of the day was defeated in an election. Like many others, he was asked to look elsewhere for employment and a political appointee replaced him. In plain words, he was fired!

He moved back to Ste-Anne-de-Bellevue and became Professor in the Department of Entomology at Macdonald in 1926. In 1934 he was appointed Dean of the Faculty of Agriculture and a year later received the additional appointment as Vice-Principal. In 1937-38 he was, for nine months, Acting Principal of McGill University and head of the Department of Zoology. He retained the office of Chairman of the Entomology Department until he retired, in spite of the fact that he did not come near the Department for years at a time. Dr. E. Melville DuPorte, who outshone Brittain in several respects, had the job but not the title - because he was black!

Dr. Brittain came back to Nova Scotia during several summers and directed the study that resulted in the classic publication *Apple Pollination Studies in the Annapolis Valley, N.S., Canada, 1928-1932*.

During the 1939-45 war, Macdonald College became the chief training centre for the Canadian Women's Army Corps (CWACs). Brittain was Superintendent of the centre and had the rank of Lt. Colonel. He wore the uniform most of the time but hated to be saluted as it meant he would have to return the salute. For that reason he was usually bare headed.

He retired in 1955 but had a post-retirement appointment as Curator of the Morgan Arboretum. He gave the convocation address in 1955 and was granted the degree of Doctor of Laws (*honoris causa*).

It was said that Brittain solved problems by ignoring them until they went away. I cannot vouch for this but I know that he was adept in making himself unavailable to some members of staff. During the latter years of his 20-year tenure as Dean, he "escaped" from his office quite regularly and, if needed for anything, had to be tracked down in the Morgan Arboretum. Helen Neilson has told of an occasion when she had to obtain his approval for some item and literally had to plough through ankle-deep mud to get to him. On at least one occasion when a stranger was looking for him and did not recognize him in his dirty and disreputable attire, asked him if he had seen Dr. Brittain. The reply was "Yes, he went that-away". He had built a cabin in the Arboretum that he named "Chalet Pruche" and this literally became his second office.

His handwriting was so bad that he once said he owed his success to the fact that professors could

not read what he had written. One Cornell professor passed one of his papers on genetics to an expert in Sanscrit, who told him that it appeared to be written in an unknown and undoubtedly very ancient language. Brittain had to meet the professor in his office and explain what he had written before he would give him a grade.

He was a great storyteller and I sincerely doubt that anyone who knew him had not been cornered with "Did I ever tell you about?"

His work with the Morgan Arboretum and the "Birch Trail", specimens of birch trees from all parts of this land, are well known. The Arboretum occupied most of his time and effort from the time he retired until his death in 1971.

During his stay in Nova Scotia he, Alan Dustan, and Eric Boulden [N.S.A.C. Principal when Vic graduated] bought three acres of land and had a camp built for them beside a lake near Windsor Forks. Brittain always called it Daniel's Lake though the maps now show it as Zwicker Lake. Alan Dustan soon moved to Ottawa and Eric Boulden was farming and had little time so Bill Brittain became the sole owner. The land was purchased from Warren Smeltzer and the log camp was built by Edward Smeltzer and Harvey Armstrong.

There are many tales about Brittain's camp, the "Lion's Den" was his name for it. The tales include finding squirrel's nests in coat pockets and of a hole in the floor where the tea grounds were dumped, but it was clear that he was most contented when he could escape from the "rat race" and be close to nature. He continued almost annual summer visits long after he no longer resided in Nova Scotia.

Dr. Brittain is well known for his work in the Morgan Arboretum but who has heard of the "Brittain Arboretum" in Nova Scotia? In the area surrounding the "Lion's Den" during the middle 1930s he brought in and planted trees and shrubs, none of which were native to the region. They included Douglas-fir, Sitka spruce, lodgepole pine, western redcedar, eastern redcedar and western white birch. From the original plantings, three trees of each, some of them are regenerating naturally. From the original western redcedar there are now more than 25 that exceed 35 feet in height and numerous seedlings. In all, he planted more than 100 non-native trees and shrubs and many non-native flowers. Most of them are still growing very well.

Dr. Brittain's love of nature and trees in particular, show clearly in his paraphrase of William Shakespeare's "The Lout":

Ode to a Birch Tree

Wives there be who kill their husbands, Putting poison in their tea:
Men there be who slay their women, Push them overboard at sea!
But the meanest of these wretches, Though through all the world you search
Is the lout devoid of feeling, Who could peel a silver birch!

The camp deteriorated over the years. Dr. Brittain had directed that it be deeded to Acadia University but the University handed it back in 1967. It was then deeded to the present owner, Gerald Smeltzer, a long-time Federal employee in agriculture, son of the former owner of the land and nephew of the man who built the cabin. Gerry was an old friend of Dr. Brittain's. In 1990 Gerry and two helpers, Don Palfrey and Doug Slater, both former classmates of mine, made extensive repairs, including replacing

some logs and a new roof. Gerry has planted a number of flowering plants, including 50 rhodendrons which are flourishing and add new beauty to the area.

There is another aspect of the character of this shy though outwardly outgoing individual. He was an accomplished con man when he thought he needed to be, to obtain something for the College or Arboretum, usually money, but the inner nature of the man is perhaps best shown by a poem that he wrote in 1949.

Dawn on Daniel's Lake

The birch trees stand all ghost-like in the dawn, Etched on the mantle of the misty morn;
High in each leafy tree, the unseen thrush, Fills the trembling air with sliver chimes.

The sun still hidden by the eastern hills, Lights the horizon with a saffron glow;
Touches with gold the ripples on the shore, And strikes to flame the limpid spheres of dew.

But now her beams seek out the further shore, She lights the east with an intenser glow;
Trembles one breathless moment on the rim, Then bursts in glory from behind the hill.

Dr. Allison Deforest Pickett

1900 - 1991

Tall in the Saddle

by C. Roger MacLellan

I have an imaginary vision of Dr. A.D. Pickett. He is riding high on a chestnut horse wearing beige colored clothing, western boots, a dark hat with a broad brim beneath which his gleaming blue eyes shine with determination. In real life I have never seen him ride a horse, wear all beige clothing, or model a wide brimmed hat, but those brilliant blue eyes were unforgettable! I have no idea where this apparition comes from, but I've enjoyed it for years. The eyes, especially were etched into my memory that day in 1948 when A.D., tall thin, even gaunt looking, first strode into the laboratory where I was then employed as a summer student, and shook my hand.



He was the Officer-in-Charge of the Dominion Entomological Laboratory in Annapolis Royal and his reputation was well known to me before I arrived for work. The incumbent of such an appointment held profound power. His authority was unquestionable and the future of underlings rested almost solely upon his assessment of your value. To "muck up" was just not cool! But AD's eyes gave him away. He was not the tyrant or lord-and-master that rumour suggested or his position assigned to him. He was really a dedicated human being!

Increasing spray costs, unpredicted pest problems, and the loss of the lucrative British market led to a crisis in the apple industry in the 1940s: its very survival was at stake. A new and cheaper approach to insect problems was essential. Only AD could have convinced the powers in Ottawa that the effects of sprays should be investigated thoroughly. No one else could have provided that firm leadership and resolute tenacity needed to continuously persuade those in authority to allow a group of entomologists to pursue, and persist in, the ecological work that eventually became the core of pest management.

In the late 1940s, miracle drugs and pesticides were all the rage. Certainly DDT was in the ascendency and entomologists throughout North America and Europe tested it with abandon on all and every pest available. The literature was full of glowing reports on the efficacy of DDT and the pesticide industry was elated. Hundreds of those involved, especially in the control of orchard pests, were convinced that chemical control was the only way to go. Convincing such persons that biological and natural controls were more permanent and reliable was nigh impossible, but AD persevered and gained the time necessary to show that long term studies were essential to prove that natural enemies - parasites, predators, and pathogens - could control many of the most serious pests of apple.

AD came from that generation of persons who believed that only pious work ethics would keep you on the road to survival. Work was a 24-hour job. He was not worried about colleagues his own age, for they had suffered the same perils and difficulties that he had, but he need not have worried about any later generation either. After all, entomology is such a fascinating science that all its advocates are diligent workers! However, AD looked on my generation with misgivings. There was no time for coffee breaks! There was no time to put your feet up on the desk and just think! There was no time to be in the office on a fine day when you could be out taking field records! There was work to be done!

Over the years AD mellowed and relented. On his travels to other establishments he soon discovered the impact that informal conversations during short work breaks had among colleagues, and of the value of persons mulling data over in their minds while physically relaxed. A coffee klatch soon became the norm among entomologists. AD also came to realize there was a distinction between laziness and efficiency. Conformity to traditional work methods, which disregarded the time factor, was still germane. When we moved into a new laboratory he had the insectary placed some distance away. When asked that it be moved closer his reply was "Surely you don't object to walking a few hundred yards to it"! When that structure fell apart, its replacement was built nearer the laboratory without provoking any ire from him. He too required its use!

AD had his embarrassing moments as well. I remember an encounter with him over a report of mine. He counselled that I should not use the word "detrimental" in relation to insects, because insects do not have minds. The word "detrimental" was inappropriate! When it was suggested that it was no different than "experimental" or "departmental", his eyes blinked, he blushed, turned about, and retreated to his office without a word. That incident was never mentioned again.

In the early days of the program, AD occasionally "borrowed" prominent findings from his fellow researchers for inclusion in his talks and papers without the authors being acknowledged. However, he really believed he had a right to such information. Most Officers-in-Charge did. They were responsible for the totality of the work of the laboratory, and felt that any in-house report was theirs for the taking. As one whose material was frequently used by AD, I was appalled, perplexed, and bewildered. It was useless to complain to the hierarchy, which concurred in the practice. The problem was finally resolved when researchers published their own data, thus forcing recognition. Still, at the time, the practice proved fruitful: AD convinced the top authorities that long term studies were crucial. After all, that was his self-assigned aim.

The fallacy of AD as a tyrant, potentate, or even an autocrat was easily dispelled merely by talking privately with him. Freely approachable, he received you warmly, intelligently discussed your concerns and interests, and suggested logical solutions to problems. He was a pleasant conversationalist. When asked to review a paper, he studied the subject matter intently, helped in sentence construction, questioned ambiguity, and made sure that what you wrote was what you meant to convey. He himself wrote clear and

detailed letters and welcomed ongoing correspondence with colleagues on various assignments. Once you got to know him, you found him friendly, firm, fair, honest, and helpful. In fact, his actions and reactions were no different than ours. He was not infallible. Truly he was one among us.

The spectre of the horseman, therefore, is a fair representation of the man. There he sits, in full control of the animal, the project. The nondescript colour of his clothing depicts his wish to blend in with his surroundings and fellow workers, and the hat defends his impressive personal achievements from the damaging rays of his critics. And still, those true blue eyes show the care and concern that A.D. Pickett had for nature and humankind. He clearly was - Tall in the Saddle.

Byron Wentworth Flieger

1904 - 1977

by Edward G. Kettela

Barney Flieger was born and raised on the Miramichi in Chatham in 1904, a New Brunswicker through and through, and as colorful a character as only the Miramichi could produce. I came to know him in September of 1967 when he was on the payroll of International Paper, and Managing Director of Forest Protection Ltd., his creation.

Barney was a Professor of Forestry at the University of New Brunswick, when he was called upon in the early 1950s to become Manager of Forest Protection Ltd. FPL was a New Brunswick Company charged with carrying out an aerial spray program to minimise spruce budworm damage. He knew the risks, because there was little experience anywhere in the world for such an undertaking.



He mustered the people and resources, and developed the technology and strategy that kept the forest alive and growing through the worst outbreak in New Brunswick's history. In doing so he had the wise counsel of Adams, Balch, Pickett, and their colleagues, as well as the technical and financial support of the New Brunswick Government and industry.

Flieger had immense energy, an upbeat personality and a rich sense of humour. All these were needed to help him sustain the stresses of building remote airstrips and facilities, pioneering new technology, enduring public criticism and occasional aircraft mishaps, and continually seeking more environmentally benign but effective spray formulations.

My purpose here is not to give a chapter and verse account of his life. That is adequately displayed at the New Brunswick Woodsmen's Museum in Boiestown. It is to give a colorful light-hearted view of a person who deeply touched the lives of many people. Once you met Barney, there was no forgetting him. His enthusiasm for forestry and the protection of forests was an inspiration to foresters, entomologists, spray pilots, wildlife and aquatic biologists, and decision makers. All were challenged by Barney's initiative, imagination, and concern for protection of forests in the best and least impactive manner possible. His wit and wisdom were legendary.

By entomologists and foresters alike he is remembered as the force that brought real forest protection from the spruce budworm to New Brunswick, and in developing it as a potent forest protection tool.

The budworm and Barney were sparring partners for a long time. His interest stemmed from his early life in Chatham, which was a major sawmilling town. He saw the 1918-1923 budworm outbreak devastate the forest industry and ruin the livelihood of the people of the Miramichi watershed. This interest eventually led him to do a study (1940) and prepare a report "A Report on the Post Budworm Forest..." This report, of which I have the original, was made required reading for federal foresters and entomologists by his friend, Malcolm Prebble, Director of the Forest Biology Division in Ottawa. By the time I met Barney, a series of entomologists had come and gone. These were many, but I must mention a few budworm entomologists, my predecessors: Frank Webb, Gordon Mott, and Ross Macdonald.

Bev McDougall, Barney's operations manager, orchestrated our meeting. It was to seem a casual meeting. "Hey there young fella! I'm Barney Flieger, the guy they are telling you all the lies about." I liked him from that very moment, and we became fast friends. He was also my mentor, and showed me a whole new way of looking at the world. For a young man getting started, I couldn't have been luckier.

Barney would try anything to get a leg up on the budworm and made it a practice of going to all the right meetings and "rubbing shoulders" with entomologists and foresters. He always liked a second opinion, or for that matter, a third opinion, and liked nothing better than getting into a room full of "experts" and "stirring the pot".

Although he didn't seem so, he was a cautious man, but when a decision was reached, all effort was expended. At his instigation, the Interdepartmental Committee on Forest Spray Operations was created. That institution is still in existence as the Forest Pest Management Forum. Similarly his creation, Forest Protection Ltd., is still in existence.

Barney made it a point never to go with one of anything, and that included entomologists. To make sure I stayed on the right track, in my first few years of the spray program, he retained Bob Nash of the Maine Forest Service and forest entomology Prof. Rae Brown of U.N.B. to look over my shoulder. It was truly a lot of fun. He also took it upon himself to take me across the country and meet with Ken Graham, Sam Graham, Jack Barry, Tom Waters, and a host of other people. It was an exhilarating experience.

He really liked to poke fun at bureaucrats, and he did his best at the Forest Pest Management [then "Control"] Forum one day by announcing that we were going to get even with the robins (Robins/blueberry litigation case) and eat them in a pie.

It was never dull with Barney around, and with his passing we lost a dear friend and colleague. It is with the fondest thoughts and greatest affection that I remember him. Thank you for the opportunity to talk about him.

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Adams, J.B.	7:60, 26:78-79
Balch, R.E.	23:85, 26:81-82
Brittain, W.H.	3:22
MacLellan, C.R.	11:25
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In Memory

James Marshall (1903-1996)

James Marshall died in Summerland, B.C. on 30 December 1996 at the age of 93 years. He had entered hospital for treatment of a fractured pelvis but soon developed pneumonia which proved fatal.

Born in Scotland, Jim came to Canada with his parents early in the century. He grew up in the farming community of Summerland where he was exposed at an early age to the practical aspects of fruit growing. He obtained his post-secondary education at the Ontario Agricultural College (now the University of Guelph), Washington State University, and Macdonald College of McGill University where he earned a Ph.D.



Jim worked for the Ontario Department of Agriculture for a while but soon returned to the West where he devoted much of his career to the control of the codling moth. In the mid 1930's he was placed in charge of codling moth investigations at Washington State University, Wenatchee, and became an international authority on the chemical control of this pest.

Jim returned to Canada in 1938 to head the Fruit Insect Laboratory at Vernon, B.C. He immediately reduced the number of lead arsenate sprays for codling moth control and replaced them with cryo-lite-oil and fixed nicotine-oil. These changes greatly reduced arsenic and lead residues on harvested fruit. An American ban that had been placed on British Columbia fruit a year earlier was lifted.

In 1945, Jim moved the laboratory to Summerland, first to temporary quarters and two years later to a new building at the Research Station.

Early in his career Jim was primarily interested in the chemical control of orchard pests. Among his achievements was the development of a salt of dinitrophenol for control of orchard mites. He also introduced heavy dormant oil mixed with lime sulphur for control of San Jose scale, a pest that was threatening the export of British Columbia apples.

Although Jim's research leaned towards the use of chemicals, he was also very aware of the possibilities of biological procedures for pest suppression. He introduced the parasite *Aphelinus mali* which gave successful control of woolly apple aphid and in so doing curtailed the spread of perennial canker of apple. The widespread use of DDT, starting in the late 1940's, caused serious mite infestations which prompted him to initiate research on integrated pest management, a procedure that is now used by most British Columbia fruit growers.

In the 1950's, Jim initiated investigations on the release of mass-reared, sterile codling moths for control and possible elimination of this pest from British Columbia orchards. The method had yielded very good results, but commercial implementation had been delayed until the 1990's because of cost. Additional funds have recently been made available by the Provincial and Federal Governments so that the British Columbia Fruit Growers Association has been able to adopt the method for codling moth control in the Similkameen, Okanagan and Creston valleys.

Jim made many non-entomological contributions to the fruit industry. He revolutionized orchard spraying by replacing laborious hand-gun spraying with light-weight concentrate sprayers. Also, on a trip to New Zealand, Jim saw the growers using large wooden bins for transporting harvested fruit to the packing sheds. He introduced this concept to British Columbia. The method reduced fruit bruising and eliminated the lifting of 40-pound apple boxes. In studies of codling moth survival in the absence of fruit, Jim noted that certain concentrations of dinitroresol spray applied at bloom would kill most but not all the apple flowers. This observation led to the general use of dinitroresol for apple thinning, replacing the expensive procedure of hand thinning the fruit.

Jim was involved in many community activities. He served on the Summerland School Board and upon retiring in 1963 ran as the Conservative candidate in the Provincial election of that year. In 1967, he received the Summerland Good Citizen Cup.

Jim was an outdoors person with many interests including sailing, hiking and gardening. He enjoyed reminiscing with "the troops," a term he affectionately used for his staff. He was an avid reader especially of the works of Robert Burns and was sometimes asked to address the Hags at Burns Night Celebrations.

Jim is survived by three daughters, nine grandchildren and 14 great grandchildren.

M.D. Proverbs and friends
Summerland, B.C.

UPCOMING MEETINGS

89th Annual Meeting of the Quebec Society for the Protection of Plants (QSPP).

The QSPP invites all persons interested in pest, disease and weed management to attend its 89th Annual Meeting. The meeting, entitled "Pesticides resistance: evolution and management", will be held at the Centre Agronomique de Sainte-Croix de Lotbinière on 12-13 June 1997. Contact: Jacques Brodeur, Département de Phytologie, Pav. Paul-Comtois, Université Laval, Québec (Québec) G1K 7P4.

Phone: 418-656-2131 ext. 2518; Fax: 418-656-7856; E-mail: Jacques.Brodeur@plg.ulaval.ca

89^e Congrès annuel de la Société de protection des plantes du Québec (SPPQ)

La SPPQ invite toutes les personnes intéressées à la phytoprotection à venir assister à son 89^e congrès annuel. Cette rencontre, ayant pour thème « La résistance aux pesticides: évolution et gestion », se tiendra les 12 et 13 juin 1997 au Centre Agronomique de Sainte-Croix de Lotbinière. Information : Jacques Brodeur, Département de Phytologie, Pav. Paul-Comtois, Université Laval, Québec (Québec) G1K 7P4.

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E.S.C. Bulletin S.E.C.
MISCELLANEOUS

ESC Heritage Committee Update

As many members realize, Canada has been the home for a large number of widely respected entomologists for the past 150 years. Our Society itself has a proud history, and their membership, since it's founding in 1863. Thousands of research papers and reports, many published in the "Canadian Entomologist," serve as living testimony to these men and women and their accomplishments.

But these word-class entomologists were also people. Their contributions as Canadians often transcended their knowledge about insects, whether as key figures in government, authors of policy and regulation, or as respected leaders and participants in their own communities. Sadly, the real - and complete - story about many of these sterling individuals is not well known. They, their personal papers, awards and accomplishments have been lost and forgotten.

The Heritage Committee has received an invitation from the beleaguered National Archives of Canada to submit the personal papers of one or two "outstanding Canadian entomologists" before downsizing there terminates this offer. This is sort of a "last chance for now" opportunity for the ESC. Thus, several members are actively sorting and assessing several boxes of materials from Regina to Fredericton. We hope to make this contribution to Canada before we lose the present opportunity.

Members of ESC can help. Let us know about available papers or about those outstanding individuals worthy of consideration (via the Chairman of the Heritage Committee) and we will do our best to review, gather and submit each and every collection. While the opportunity may be limited at Ottawa at present, there may be place for what you find or recommend at provincial archives or at universities. Your own assertive actions and direct involvement would be appreciated.

The ESC Heritage Committee is looking for new members - interest and enthusiasm are the only prerequisites. For more information about membership and about our projects, please contact:

Robert F. DeBoo, Chairman, ESC Heritage Committee
805-327 Maitland Street, Victoria, BC V9A 7G7
Tel: (250) 380-0707; FAX: (250) 380-0708
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NET, SHOVEL AND AXE

Wasp Control

"Are you sure you have the right address?" inquired Conrad of Jason as they walked around the house on McMurchy Street in Saskatoon, Saskatchewan.

"The lady said 177 McMurchy, and that is right here," replied Jason.

"But I don't see any wasp nests," said Conrad. "I wonder where they are? The lady said there were several nests because they were everywhere. I wonder what she meant, for I don't see them."

The two entomologists had been summoned by a very excited female voice on the telephone, telling them of the annoyance caused by wasps at her house on McMurchy Street. They had agreed to investigate the complaint and, if possible, to get rid of the wasps. The lady said she was going to leave the house for she did not want to be around when the boys removed the nests. They could have the premises all to themselves; she was not about to stick around and be stung. But first of all, they had to find the wasps and their nests.

"Oh, look up in the eaves, Jason," said Conrad. "I see a small paper nest up in the apex of the gable but it is only about two inches in diameter and certainly could not house as many wasps as the woman said there were around here. She insisted that there were thousands of the insects on her premises and that means there probably are several nests."

"Hey, look here," replied Jason as he pointed to a pile of feathers in the dense flower bed at the side of the house. "This dead bird could have attracted a large number of the insects." Upon examination of the feathers they found them to be the remains of what had once been a mature woodpecker. The dead bird had apparently broken its neck by flying into the large window pane above the flower bed, and the wasps - probably from distant places - had gathered for a feast. They had picked all the meat from the bones and left a pile of feathers and the skeletal remains.

"The feast is over," said Jason. "I would bet that the lady's problem is over as well. The wasps have had their day and have no need to return here. Their scavenging work is done. But if we can get rid of the small nest in the eaves, that will satisfy the lady. How do you propose we get rid of the small nest? We did not bring a ladder so that we could get to the apex of the gable."

"Oh, no need for a ladder," replied Conrad. "We will burn it. It's just paper and there won't be enough heat to reach the ignition point of wood, so there will be no danger of burning the house down."

"Good heavens," exclaimed Jason when he heard of Conrad's plan to set the nest on fire. "Just because the nest is made of paper and it is small, is no reason to assume there is no danger. There's no telling what fire will do. I want no part of that kind of pest control."

"Ah, don't be a sissy," replied his cocky companion. "Nothing will happen and it will be a quick way to get rid of the nest." With that he stuck a match into a clamp on the extensible handle of his insect net, lit the match and held it up to the nest in the eaves.

"Don't do it," yelled Jason, but his words came too late. His worst fears were about to be realized. The paper nest flared up in a quick flash of flame; a small ball of fire exploded in the gabled apex of the eaves. It did not die but in the next second, the flames raced down the eaves fuelled by the loose, flaked paint that was peeling from the soffit. It raced around the corner and roared down the soffit at the side of the house, only to burn itself out at the next corner.

"Good Lord Almighty," yelled Jason. "You stupid fool. You could have burned the place down." A shaken, white-faced Conrad meekly submitted to his partner's scolding words. It had been a foolish thing to do; the consequences could have been very serious, indeed.

"Let's find a broom and sweep off the burned particles of paint from the soffit," said Jason "I hope we can tidy up the place and not leave any telltale signs of your stupid act. Then let's get out of here."

After a thorough sweeping and brushing of the soffits, and reaching as high into the gable as they were able, they managed to remove the carbonized paint particles, leaving the house in a fairly tidy condition. Then they quickly left. They never heard from the lady again, a good indication that the rash and thoughtless action of Conrad had not left any evidence of what could have been a disastrous method of wasp control.

Contributed by
Paul Riegert

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