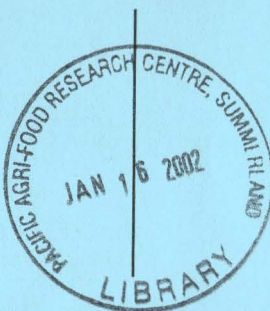


Bulletin

Entomological Society
of Canada

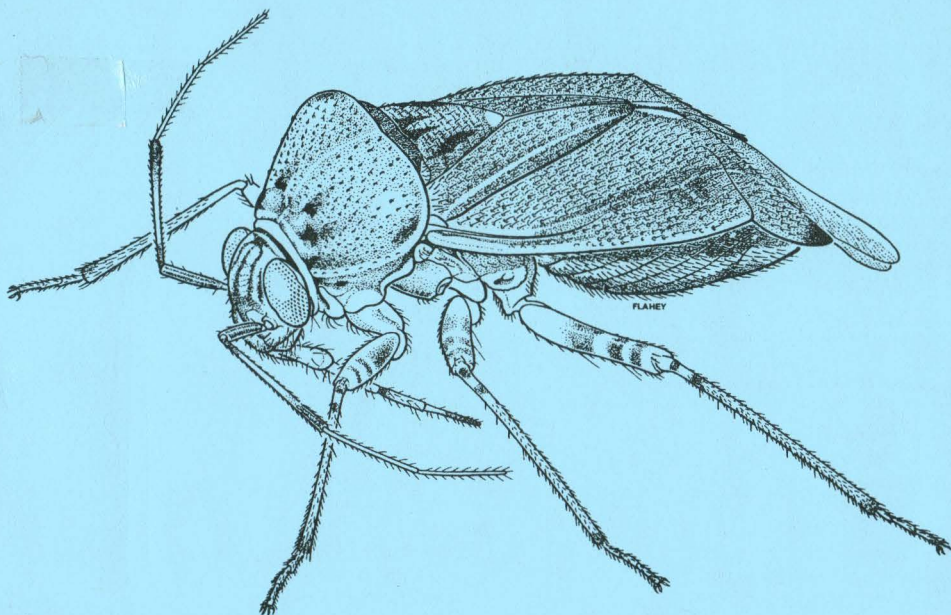
Société d'Entomologie
du Canada



Volume 33

No. 3

Sept - sept, 2001



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:
September 2001

Web Page for the ESC: <http://www.biology.ualberta.ca/esc.hp/homepage.htm>

E-mail: entsoc.can@sympatico.ca

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 *Lygus lineolaris* (Palisot de Beauvois) (Hemiptera: Miridae). The tarnished plant bug is indigenous to North America and found in nearly all agricultural areas, feeding on buds, flowers, and seeds of over 300 recorded hosts with 130 regarded as economically important plants. In Canada, it causes important reductions of seed yield in oilseed rape, *Brassica napus* L. and *Brassica rapa* L. (Brassicaceae), and alfalfa, *Medicago sativa* L. (Fabaceae). Hatching drawing by Barry Flahey, Manotick, Ontario, courtesy of Agriculture and Agri-Food Canada.

Illustré sur la couverture se trouve une femelle *Lygus lineolaris* (Palisot de Beauvois) (Hemiptera: Miridae). La plante ternie par la punaise est indigène à l'Amérique du nord et se retrouve dans la plupart des endroits agricoles, se nourrissant sur les bourgeons, fleurs, et graines au-delà de 300 hôtes enregistrés dont 130 considérés comme plantes importantes économiquement. Au Canada, ceci cause des réductions importantes de rendement des graines à cause de l'enlèvement *Brassica napus* L. et *Brassica rapa* L. (Brassicaceae), et alfalfa, *Medicago sativa* L. (Fabaceae). Dessin d'Habitus par Barry Flahey, Manotick, Ontario, courtoisie d'agriculture et agroalimentaire Canada.

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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

52st Annual General Meeting

The Annual General Meeting of the Entomological Society of Canada will be held in Winnipeg, Manitoba, October 9, 2002.

La réunion annuelle générale de la Société d'entomologie du Canada aura lieu à Winnipeg, Manitoba, le 9 octobre, 2002.

Governing Board Meeting (date to be announced)

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. Rick West
31 Drover's Heights
Portugal Cove - St. Philips, Newfoundland A1M 3G6
Phone and fax: (709) 895-2734
E-mail: reely.west@roadrunner.nf.net

The *Canadian Entomologist* and past issues of the *Memoirs* are available from the Ottawa office and may be purchased by Mastercard, Visa, cheque or money order.

Please send all correspondence concerning the Bulletin to:

Dr. Dan Johnson
Bulletin Editor
Research Centre
Research P.O. Box 3000
Lethbridge, AB, T1J 4B1
Tel: (403) 327-4561
Fax: (403) 382-3156
JohnsonDL@em.agr.ca

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

Dr. Vince Nealis
Chair, Publications Committee
506 West Burnside Road
Pacific Forestry Centre
Victoria BC, V8Z 1M5
Tel: (250) 363-0663
Fax: (250) 363-0775
vnealis@pfc.forestry.ca

President's Report

It has indeed been a busy summer for entomologists. It seems like there have been an unusual number of insect issues in the press and on television and radio. A number of Society members have given interviews on a range of insect-related new items, such as mosquito numbers (high numbers in some regions, low numbers due to draught in other areas, as vectors of West Nile disease), grasshopper outbreaks, soybean aphids, dutch elm disease, mountain pine beetle outbreaks, etc. It is all good publicity for the science of entomology.

I want to report on one development of importance to the development of future initiatives for the Society. Many members have recognized the need to expand the Society's web site capabilities. I am pleased to say that Rick West (who already does a tremendous job as Secretary) has agreed to work with Barry Lyons (Webmaster) and Dan Johnson (Bulletin Editor) to develop an independent website for the Society. This will ensure that the Society can keep up with recent developments in the delivery of electronic publication, document delivery and dissemination of information and services to members and the public.

Rapport du Président,

Ce fut un été très occupé pour les entomologistes. Il semble qu'il y ait eu un nombre étonnamment élevé de reportages traitant des insectes dans la presse, ainsi qu'à la télévision et à la radio. Plusieurs membres de la Société ont donné des entrevues sur des sujets d'actualité liés aux insectes, notamment la quantité de moustiques (haute densité dans certaines régions, faible densité due à la sécheresse dans d'autres régions, comme vecteurs de la maladie du virus du Nil), l'émergence des sauterelles, les pucerons du soya, la maladie hollandaise de l'orme, l'émergence du dendroctone du pin ponderosa, etc. Tout cela est une bonne publicité pour la science de l'entomologie.

Je veux faire état d'un sujet important concernant le développement de futures initiatives pour la Société. Plusieurs membres ont reconnu le besoin d'accroître les capacités du site internet de la Société. Je suis heureux d'annoncer que Rick West (qui a déjà accompli un travail énorme en tant que secrétaire) a accepté de travailler avec Barry Lyons (webmestre) et Dan Johnson (éditeur du bulletin) afin de développer un site internet indépendant pour la Société. Cela assurera que la Société puisse suivre les développements récents au niveau de la distribution des

publications électroniques, de la livraison des documents et de la dissémination de l'information et des services aux membres et au public.

Elections Results

Announced by ESC Secretary Rick West

Vice-President:

Dr. Charles Vincent

Horticultural Research and Development Centre

Agriculture and Agri-Food Canada

430 Gouin Blvd

Saint-Jean-sur-Richelieu

Quebec, Canada J3B 3E6

Director-At-Large:

Dr. Jon Sweeney

Natural Resources Canada

P.O. Box 4000

Fredericton, New Brunswick E3B 5P7

**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 2002). 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 February 28, 2002.

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 2002) 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 28 février 2002.

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.

2001 Joint Annual Meeting of the Entomological Societies of Ontario and Canada



**Sheraton Fallsview Hotel
and Conference Centre**

Niagara Falls, Ontario, 20-24 October 2001

Co-Hosts of JAM 2001



PROGRAM

Saturday 20 October

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

Sunday 21 October

10:00-16:00 Registration

10:00-12:00 Entomological Society of Ontario Governing Board Meeting

13:00-15:00 **Workshop 1:** "Entomology in Parks & Protected Spaces" (S.Marshall, organizer)

15:00-17:00 **Workshop 2:** "Bringing Insects to the Public" (M.Pickles, organizer)

19:30-20:30 Students Meet the Board (included for students)

20:30-22:30 JAM 2001 Mixer (included)

Monday 22 October

07:00-09:00 Setting-up of posters

07:00-08:30 Continental Breakfast (included)

08:00-16:00 Registration

08:30-09:45 Opening Ceremonies, ESC Awards, Gold Medal Address

10:15-12:15 **Plenary Session:** "2001: An Insect Odyssey"

Sponsored by: Ontario Ministry of Agriculture Food and Rural Affairs

Dr. Freeman McEwen - Heritage Lecture

Dr. Dennis Avery (Center for Global Food Issues, USA)

Dr. Michael Dixon (University of Guelph)

12:15-13:30 Buffet Lunch (included)

13:30-16:00 **Submitted Papers/Student paper competitions/Poster session**

13:30-16:00 **Workshop 3:** "Dealing with New Insect Introductions" (B.Helson, R. Footitt, organizers)

Sponsored by: Canadian Forest Service

16:00-17:30 Entomological Society of Ontario Annual General Meeting

20:00-22:00 President's Reception (by invitation only)

Tuesday 23 October

06:00-09:00 Setting-up of posters

08:00-16:00 Registration

08:30-12:00 **Symposium I:** "Emerging Technologies in Pest Management"

Sponsored by: Ontario Ministry of the Environment

Dr. Mark Winston (Simon Fraser University)

Dr. Larry Larson (Dow AgroSciences, USA)

Dr. Tony Shelton (Cornell University, USA)

Dr. Leonard Ritter (University of Guelph)

- 12:00-13:30 Lunch on Your Own
13:30-16:30 **Workshop 4: "Entomology of Vineyards in Canada"** (C.Vincent, N. Bostanian, organizers)
- 13:30-16:30 **Submitted Papers and Poster session**
16:30-18:00 Entomological Society of Canada Annual General Meeting
18:00-23:00 Cocktails, Banquet (included), and Awards
Guest Speaker: Dr. May Berenbaum

Wednesday 24 October

- 08:30-12:00 **Symposium II: "Tree Fruit Entomology"**
Sponsored by: Agriculture and Agri-Food Canada
Mr. Bernt Solymar (OMAFRA, Simcoe), Dr. David Pree (AAFC, Vineland)
Dr. Howard Thistlewood (AAFC, Summerland), Dr. Gary Judd (AAFC, Summerland), Dr. Charles Vincent (AAFC, St. Jean sur Richelieu)
- 08:30-12:00 **Submitted Papers**
08:30-12:00 **Workshop 5: "Spatial Analysis in Applied Entomology"** (R.Bourchier, organizer)
12:30-14:00 Entomological Society of Canada Governing Board Meeting

Official Sponsors of JAM 2001

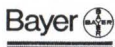


syngenta

MINISTRY OF Agriculture,
Food and Rural Affairs

MINISTRE DE L'Environnement

BASF



Gustafson



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

Canadian Forest Service

**2002 Joint Annual Meeting announcement,
from the Entomological Society of Manitoba**



**The 58th Annual Meeting of the Entomological Society of Manitoba and
the 52nd Annual Meeting of Entomological Society of Canada**

October 6-9 (Sunday to Wednesday), 2002

The meeting is scheduled to coincide with the spectacular bird migration along the Red River Valley, the pleasant autumn weather we experience in early October, and the possibility of late season insect collecting. The chair of the Organizing Committee is Don Dixon (204-945-3861, ddixon@gov.mb.ca) and the chair of the Program Sub-committee is Bob Lamb (204-983-1458, rlamb@em.agr.ca).

We tentatively plan to hold the opening ceremonies and first symposium on Sunday afternoon.

The Organizing Committee offers to assist associated groups to coordinate their meetings with the ESC/ESM meeting, and make efficient use of travel and meeting budgets for all.

Your suggestions for workshop and symposia topics or guest speakers are welcome. A proposal for a symposium "Ecology and Diversity of Grassland Arthropods" has already come in from Terry Wheeler and Rob Roughley. Contact Bob Lamb with your suggestions.

The latest information on the Joint ESM/ESC Meeting is available at the ESM web site at:

<http://home.cc.umanitoba.ca/esm/meet-esc.html>.

Organizing committee:

<http://home.cc.umanitoba.ca/esm/esc-org.html>

Entomological Society of Canada / Société d'entomologies du Canada

Committees and Representatives 2000-2001 / Comités et Représentants 2000-2001

A- Standing committees/Comités permanents

Nominations/Nominations

D. Johnson, Chair, Lethbridge
R. Bennett, Victoria
J. Delisle, Sainte-Foy
R. Foottit, ex officio, Ottawa

Elections/Elections

R. Hallett, Chair
J. MacIntyre, Guelph
one vacancy to be filled
R. Foottit, ex officio, Ottawa

B- Continuing Committees/Comités en cour

Achievement Awards/Prix d'excellence

B. Roitberg, Chair, Burnaby
J. McNeil, Quebec
M. Isman, Vancouver
V. Behan-Pelletier, Ottawa
R. Foottit, ex officio, Ottawa

Annual Meeting/Réunion Annuelle

P. de Groot, Chair, Sault Ste. Marie
R. Foottit, ex officio, Ottawa

Bilingualism/Bilinguisme

L. Royer, Chair, Corner Brook
F. Fournier, Montréal
H. Chiasson, St-Jean-Sur-Richelieu
M. Roy, Québec
R. Foottit, ex officio, Ottawa

Bylaws, Rules & Regulations/Règlements

M. Goettel, Chair, Lethbridge
N.J. Holliday, Winnipeg
G. Boiteau, Fredericton
R. Foottit, ex officio, Ottawa

Finance/Finance

Jim O'Hara, Chair, Ottawa
Gary Gibson, Treasurer of ESC, Ottawa
Doug Parker, Ottawa
Peter Mason, Ottawa
Mike Sarazin, Ottawa
R. Foottit, ex officio, Ottawa

Headquarters/Siège social

V. Behan-Pelletier, Chair, Ottawa
J.M. Cumming, Ottawa
R. Foottit, ex officio, Ottawa
G.A.P. Gibson, ex officio, Ottawa

Heritage/Heritage

D.C. Eidt, Chair, Fredericton
P. Riegert, Regina
E.C. Becker, Ottawa
R. Foottit, ex officio, Ottawa

Insect Common Names/Noms communs d'insectes

Vacant, Chair
K. Nystrom, Sault Ste. Marie
H. Chiasson, Montreal
R. Foottit, ex officio, Ottawa

Marketing/Comité du marketing

L. Braun, Chair, Saskatoon
H. White, Winnipeg
O. Olfert, Saskatoon
R. Foottit, ex officio, Ottawa

Membership/Adhésion

R. Bennett, Chair, Victoria
Lloyd Hollett, AES
T. Shore, ESBC, Victoria
R. Bourchier, ESA
R. Elliot, ESS
R. J. Lamb, ESM, Winnipeg
D. Hunt, ESO, Sault Ste. Marie
N. Larocque, SEQ
R. Foottit, ex officio, Ottawa

Publications/Publications

V. Nealis, Chair, Victoria
G. Boivin, St.-Jean-sur-Richelieu
R. Bennett, Victoria
Peter DeGroot, Sault Ste-Marie
Peter Kevan, Guelph
Linda Gilkeson, Victoria
D.B. Lyons, Sault Ste. Marie
J. Turgeon, ex officio, Sault Ste. Marie
R. Foottit, ex officio, Ottawa
Dan Johnson, ex officio, Lethbridge.

Science Policy and Education/Politique scientifique et éducation

S. Smith, Chair, Toronto
K.G. Davey, Downsview
P.G. Kevan, Guelph
T.L. Shore, ESBC, Victoria
R. Bouchier, ESA, Lethbridge
R. Elliot, ESS, Saskatoon
R.J. Lamb, ESM, Winnipeg
D. Hunt, ESO, Harrow
N. Larocque, SEQ, Laval
L. Hollett, AES, Deer Lake
R. Foottit, ex officio, Ottawa

Student Affairs/Affaires étudiantes

J. Savage, Chair, Montréal
C. Schmidt, Edmonton
B. Sarauer, Saskatoon
R. Foottit, ex officio, Ottawa
D. Gillespie, ex officio, Agassiz

Student Awards/Prix aux étudiantes et étudiants

D. Gillespie, Chair, Agassiz
J. Delisle, St. Foy
B.K. Mitchell, Edmonton
D. Quiring, Fredericton
T.A. Wheeler, Ste-Anne-de-Bellevue
D.C. Currie, Toronto
D.J. Larson, St. John's
R. Foottit, ex officio, Ottawa

C- Ad hoc Committees/ Comites ad hoc

Joint Meeting Document

T. Shore, Chair, Victoria
J. Sweeney, Fredericton
R. Foottit, ex officio, Ottawa

An updated committee list, to be provided
by the new Executive, will appear in the
next issue of the Bulletin.

Editor's note:

During the coming year, we will see more
changes in the method of preparation and
the appearance of the Bulletin of the
Entomological Society of Canada. The
content and emphasis will also change,
adapting to the needs of the society (I
would like to be able to say, as expressed
by the members). Beginning in 2002, the
Bulletin will be accessible on our website
managed by ESC webmaster Barry Lyons.
Suggestions regarding Bulletin format and
desired content are welcome. Members
can help to keep the Bulletin current and
useful by submitting news items, annual
reports, meeting announcements, award
information, plans for workshops, or short
articles to the Editor. Send questions or
written material (other than Book Reviews,
which go to the Chair of the Publications
Committee) to JohnsonDL@em.agr.ca, or
by mail to the address shown on the
Society Business page. Questions or
comments concerning the ESC website
should be addressed to Barry Lyons,
blyons@NRCan.gc.ca .

**McCAY, DUFF
& COMPANY LLP**

CHARTERED ACCOUNTANTS

141 LAURIER AVE. WEST
6TH FLOOR
OTTAWA, ONTARIO K1P 5J3
TEL: (613) 236-2367
FAX: (613) 236-5041
1 (800) 267-6551
mccayduff@mccayduff.com
WEB: www.mccayduff.com

AUDITORS' REPORT

To the Members,
Entomological Society of Canada.

We have audited the non-consolidated balance sheet of the Entomological Society of Canada as at December 31, 2000 and the non-consolidated statements of revenue and expenditure - General Fund, surplus and cash flows 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 non-consolidated financial statements present fairly, in all material respects, the financial position of the Society as at December 31, 2000 and the results of its operations and cash flows for the year then ended in accordance with generally accepted accounting principles, except that they are not prepared on a proportionate consolidated basis as described in note 5. As required by the Companies Act, we report that, in our opinion, these principles have been applied on a basis consistent with that of the preceding year.

McCay, Duff & Company LLP

Chartered Accountants

Ottawa, Ontario,
March 5, 2001.

THOMAS W. HOWARTH, CA

BRYAN E. SULLIVAN, CA

ALBERT G. MONSIEUR, B.Admin, CA

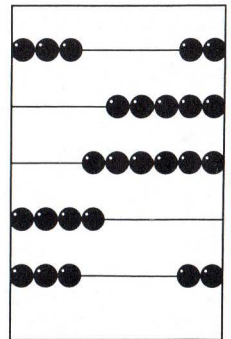
BLAIR E. DAVIDSON, B.Comm, CA

G. WARREN TRICKEY, B.Comm, CA

ROBERT D. SHANTZ, B.Math, CA

CONSULTANT-ELDREN E. MCCONNELL, CA

CONSULTANT-JOHN W. FRANKLIN, CA



**ENTOMOLOGICAL SOCIETY OF CANADA
BALANCE SHEET**

AS AT DECEMBER 31, 2000

ASSETS

	General Fund	Endowment Fund	Building Fund	Scholarship Fund	2000 Total	1999 Total
CURRENT						
Cash	\$ 168,663	\$ 10,539	\$ -	\$ 20,128	\$ 199,330	\$ 136,102
Term deposit	26,493	-	-	-	26,493	26,100
Accounts receivable	33,143	-	-	-	33,143	15,452
Accrued interest receivable	3,412	1,062	-	1,540	6,014	5,314
Interfund balances	4,134	-	-	(4,134)	-	-
Prepaid expenses	3,842	-	-	-	3,842	4,438
	239,687	11,601	-	17,534	268,822	187,406
INVESTMENTS (note 4)	167,157	64,631	-	99,699	331,487	306,442
INVESTMENT IN BOOK PROJECT (note 5)	45,055	-	-	-	45,055	52,083
CAPITAL ASSETS (note 6)	-	-	169,434	-	169,434	174,827
	<u>\$ 451,899</u>	<u>\$ 76,232</u>	<u>\$ 169,434</u>	<u>\$ 117,233</u>	<u>\$ 814,798</u>	<u>\$ 720,758</u>
LIABILITIES						
CURRENT						
Accounts payable and accrued liabilities	\$ 65,163	\$ -	\$ -	\$ -	\$ 65,163	\$ 29,547
Deferred revenue	111,192	-	-	2,000	113,192	120,635
	176,355	-	-	2,000	178,355	150,182
SURPLUS						
	275,544	76,232	169,434	115,233	636,443	570,576
BALANCE - END OF YEAR	<u>\$ 451,899</u>	<u>\$ 76,232</u>	<u>\$ 169,434</u>	<u>\$ 117,233</u>	<u>\$ 814,798</u>	<u>\$ 720,758</u>

Approved on behalf of the Board:

Governor

Governor

McCAY, DUFF & COMPANY LLP, CHARTERED ACCOUNTANTS

ENTOMOLOGICAL SOCIETY OF CANADA

STATEMENT OF SURPLUS

FOR THE YEAR ENDED DECEMBER 31, 2000

	General Fund	Endowment Fund	Building Fund	Scholarship Fund	2000 Total	1999 Total
BALANCE - BEGINNING OF YEAR	\$ 208,960	\$ 76,464	\$ 174,827	\$ 110,325	\$ 570,576	\$ 546,164
Net revenue (expenditure) for the year	68,613	(232)	(7,422)	4,908	65,867	24,412
Interfund transfers	(2,029)	-	2,029	-	-	-
BALANCE - END OF YEAR	<u>\$ 275,544</u>	<u>\$ 76,232</u>	<u>\$ 169,434</u>	<u>\$ 115,233</u>	<u>\$ 636,443</u>	<u>\$ 570,576</u>

ENTOMOLOGICAL SOCIETY OF CANADA
STATEMENT OF REVENUE AND EXPENDITURE - GENERAL FUND
FOR THE YEAR ENDED DECEMBER 31, 2000

	Canadian Entomologist		Memoirs and Other Publications		Society		2000		1999	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
REVENUE										
Regular membership	\$ 15,200	\$ 15,920	\$ -	\$ -	\$ 15,200	\$ 15,920	\$ 30,400	\$ 31,840	\$ 30,960	\$ 30,960
Student membership	600	800	-	-	1,400	2,240	2,000	3,040	1,860	1,860
Emeritus	-	-	-	-	800	760	800	760	840	840
Subscriptions	111,050	111,370	-	-	20,000	16,945	131,050	128,315	130,895	130,895
Reprints	13,500	13,307	-	-	-	-	13,500	13,307	9,655	9,655
Page charges	40,000	42,713	-	-	-	-	40,000	42,713	23,805	23,805
Back issues/Royalties	-	-	-	-	2,000	3,592	2,000	3,592	6,363	6,363
Sales of Memoirs	-	-	2,000	2,510	-	-	2,000	2,510	3,044	3,044
Sales of Arctic Arthropods and Bibliography	-	-	250	75	-	-	250	75	405	405
Gain on currency exchange	-	-	-	-	-	12,189	-	12,189	10,847	10,847
Miscellaneous	-	-	-	-	1,000	4,479	1,000	4,479	3,269	3,269
REVENUE										
- Carried Forward	\$ 180,350	\$ 184,110	\$ 2,250	\$ 2,585	\$ 40,400	\$ 56,125	\$ 223,000	\$ 242,820	\$ 221,943	\$ 221,943

ENTOMOLOGICAL SOCIETY OF CANADA
STATEMENT OF REVENUE AND EXPENDITURE - GENERAL FUND
FOR THE YEAR ENDED DECEMBER 31, 2000

	Canadian Entomologist		Memoirs and Other Publications		Society		2000		1999	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
REVENUE - Carried forward	\$ 180,350	\$ 184,110	\$ 2,250	\$ 2,585	\$ 40,400	\$ 56,125	\$ 223,000	\$ 242,820	\$ 221,943	
EXPENDITURE										
Publishing and mailing	127,000	100,990	-	-	-	-	127,000	100,990	85,812	
Reprint costs	12,000	11,349	-	-	-	-	12,000	11,349	8,270	
Bulletin publishing and mailing	-	-	-	-	14,000	11,313	14,000	11,313	14,487	
Salaries and benefits	17,012	16,955	-	-	17,012	16,955	34,024	33,910	69,691	
Editor's expenses	2,500	2,552	-	-	-	-	2,500	2,552	4,552	
Office	3,000	3,261	-	-	3,000	3,261	6,000	6,522	7,628	
Professional fees	2,000	1,640	-	-	2,000	2,460	4,000	4,100	3,868	
Prizes, awards, brochure	-	-	-	-	2,000	1,849	2,000	1,849	1,505	
Honoraria	1,000	1,000	-	-	2,625	2,625	3,625	3,625	3,625	
Committees	-	-	-	-	1,800	-	1,800	-	-	
Support of other organizations	-	-	-	-	1,400	1,054	1,400	1,054	1,300	
Annual Meetings:										
Grant	-	-	-	-	4,000	-	4,000	-	2,500	
Honorees	-	-	-	-	2,000	1,410	2,000	1,410	1,704	
Governing Board:										
Interim meeting	-	-	-	-	3,000	2,361	3,000	2,361	1,292	
Annual meeting	-	-	-	-	10,000	2,911	10,000	2,911	3,790	
Other meetings	-	-	-	-	2,000	-	2,000	-	189	
President's discretionary expenses	-	-	-	-	3,000	2,910	3,000	2,910	-	
General	-	-	-	-	-	744	-	744	432	
	<u>164,512</u>	<u>137,747</u>	-	-	<u>67,837</u>	<u>49,853</u>	<u>232,349</u>	<u>187,600</u>	<u>210,645</u>	
REVENUE (EXPENDITURE)										
FROM OPERATIONS	15,838	46,363	2,250	2,585	(27,437)	6,272	(9,349)	55,220	11,298	
Interest on investments	-	-	-	-	10,000	13,393	10,000	13,393	12,064	
NET REVENUE (EXPENDITURE) FOR THE YEAR	<u>\$ 15,838</u>	<u>\$ 46,363</u>	<u>\$ 2,250</u>	<u>\$ 2,585</u>	<u>\$ (17,437)</u>	<u>\$ 19,665</u>	<u>\$ 651</u>	<u>\$ 68,613</u>	<u>\$ 23,362</u>	

McCAY, DUFF & COMPANY LLP, CHARTERED ACCOUNTANTS

ENTOMOLOGICAL SOCIETY OF CANADA

STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2000

	<u>2000</u>	<u>1999</u>
CASH PROVIDED BY (USED FOR)		
OPERATING ACTIVITIES		
Net revenue (expenditure) for the year		
- General Fund	\$ 68,613	\$ 23,362
- Endowment Fund	(232)	4,856
- Building Fund	(7,422)	(6,812)
- Scholarship Fund	<u>4,908</u>	<u>3,006</u>
	65,867	24,412
Item not involving cash - amortization	<u>5,393</u>	<u>5,618</u>
	71,260	30,030
Net change in non-cash working capital balances related to operations		
- (increase) decrease in accounts receivable	(17,691)	7,618
- increase in accrued interest receivable	(700)	(687)
- (increase) decrease in prepaid expenses	596	(2,876)
- increase (decrease) in accounts payable and accrued liabilities	35,616	(36,863)
- increase (decrease) in deferred revenue	<u>(7,443)</u>	<u>8,720</u>
	<u>10,378</u>	<u>(24,088)</u>
	81,638	5,942
INVESTING ACTIVITIES		
Purchase of investments	(25,045)	(19,350)
Proceeds on disposal of investments	-	6,995
Decrease in Investment in Book Project	<u>7,028</u>	<u>9,955</u>
	<u>(18,017)</u>	<u>(2,400)</u>
INCREASE IN CASH AND CASH EQUIVALENTS DURING THE YEAR	63,621	3,542
Cash and cash equivalents - beginning of year	<u>162,202</u>	<u>158,660</u>
CASH AND CASH EQUIVALENTS - END OF YEAR	<u>\$ 225,823</u>	<u>\$ 162,202</u>
CASH AND CASH EQUIVALENTS		
Cash	\$ 199,330	\$ 136,102
Term deposit	<u>26,493</u>	<u>26,100</u>
	<u>\$ 225,823</u>	<u>\$ 162,202</u>

ENTOMOLOGICAL SOCIETY OF CANADA**NOTES TO FINANCIAL STATEMENTS****DECEMBER 31, 2000****1. PURPOSE OF ORGANIZATION**

The purpose of the Organization is to study, promote and advance the study of entomology through meetings, symposia 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) Investments

Investments are recorded at cost.

(c) Capital Assets and Amortization

Capital assets are stated at cost, less accumulated amortization. Amortization is being claimed on the building at the rate of 4% on the reducing balance basis. All other capital asset additions are expensed as they are incurred.

(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.

(e) Fund Accounting

The purpose of each fund is as follows:

General Fund

This fund accounts for the Society's primary operating activities.

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.

ENTOMOLOGICAL SOCIETY OF CANADA

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2000

2. SIGNIFICANT ACCOUNTING POLICIES (Cont'd.)

(e) Fund Accounting (Cont'd.)

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, excluding amortization on the building.

Scholarship Fund

This fund was created with the objective of awarding scholarships for post-graduate studies in entomology. The fund derives its revenue from donations and from the interest on the invested capital. The money is awarded in three different forms: scholarship for post-graduate studies, travel grant to subsidize student travel expenses incurred in relation to their post-graduate studies; or the Keith Kevan Scholarship which is a scholarship for post-graduate studies oriented toward systematics.

3. FINANCIAL INSTRUMENTS

Interest rate risk and credit risk

The Society's financial instruments consist of cash, term deposit, accounts receivable, investments, accounts payable and deferred revenue. Unless otherwise noted, it is management's opinion that the Society is not exposed to significant interest rate.

Currency Risk

Currency risk is the exposure to the Society's financial instruments due to changes in exchange rates. The Society is exposed to currency risk through its subscription revenues. The Society monitors its foreign subscription rates to minimize its risk.

4. INVESTMENTS

	<u>2000</u>	<u>1999</u>
General Fund		
Bonds, at cost (market value 2000 - \$172,754, 1999 - \$147,292)	\$ <u>167,157</u>	\$ <u>142,112</u>
Endowment Fund		
Bonds, at cost (market value 2000 - \$69,552, 1999 - \$68,452)	\$ <u>64,631</u>	\$ <u>64,631</u>
Scholarship Fund		
Bonds, at cost (market value 2000 - \$104,206, 1999 - \$102,748)	\$ <u>99,699</u>	\$ <u>99,699</u>

ENTOMOLOGICAL SOCIETY OF CANADA

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 2000

5. 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, 2000 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. The financial statements are in accordance with generally accepted accounting principles, except that they are not prepared on a proportionate consolidated basis.

6. CAPITAL ASSETS

	<u>2000</u>			<u>1999</u>
	<u>Cost</u>	<u>Accumulated Amortization</u>	<u>Net</u>	<u>Net</u>
Land	\$ 40,000	\$ -	\$ 40,000	\$ 40,000
Building	<u>202,799</u>	<u>73,365</u>	<u>129,434</u>	<u>134,827</u>
	<u>\$ 242,799</u>	<u>\$ 73,365</u>	<u>\$ 169,434</u>	<u>\$ 174,827</u>

ENTOMOLOGICAL SOCIETY OF CANADA
SCHEDULE OF ENDOWMENT FUND REVENUE AND EXPENDITURE
FOR THE YEAR ENDED DECEMBER 31, 2000

	<u>2000</u>	<u>1999</u>
REVENUE		
Interest revenue	\$ 4,650	\$ 4,856
EXPENDITURE		
Page charges and reprints	<u>4,882</u>	<u>-</u>
NET REVENUE (EXPENDITURE)		
FOR THE YEAR	<u>\$ (232)</u>	<u>\$ 4,856</u>

ENTOMOLOGICAL SOCIETY OF CANADA
SCHEDULE OF BUILDING FUND REVENUE AND EXPENDITURE
FOR THE YEAR ENDED DECEMBER 31, 2000

	<u>2000</u>		<u>1999</u>
	<u>Budget</u>	<u>Actual</u>	<u>Actual</u>
REVENUE			
Rental income	\$ 6,360	\$ 6,405	\$ 6,469
EXPENDITURE			
Amortization	5,620	5,393	5,618
Insurance	750	862	727
Property taxes	6,000	4,811	4,386
Repairs and maintenance	750	977	1,054
Utilities	<u>2,750</u>	<u>1,784</u>	<u>1,496</u>
	<u>15,870</u>	<u>13,827</u>	<u>13,281</u>
NET RENTAL REVENUE (EXPENDITURE) FOR THE YEAR	<u>\$ (9,510)</u>	<u>\$ (7,422)</u>	<u>\$ (6,812)</u>

ENTOMOLOGICAL SOCIETY OF CANADA
SCHEDULE OF SCHOLARSHIP FUND REVENUE AND EXPENDITURE
FOR THE YEAR ENDED DECEMBER 31, 2000

	<u>2000</u>	<u>1999</u>
REVENUE		
Interest revenue	\$ 6,686	\$ 7,185
Recovery of award	1,069	463
Donations	<u>5,153</u>	<u>4,358</u>
	12,908	12,006
EXPENDITURE		
Scholarship awards and travel grants	<u>8,000</u>	<u>9,000</u>
NET REVENUE FOR THE YEAR	<u>\$ 4,908</u>	<u>\$ 3,006</u>

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

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

Eligibility: To be eligible, a student must:

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

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

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

Evaluation Procedure: The scientific merit of each application will be evaluated by a committee that has the option of sending specific projects out for external review by experts in the field. Comments from the Awards Committee members will be provided to the applicant upon request.

Timetable and Application Procedure: Application forms may be obtained from the Chair of the Student Awards Committee or at <http://www.biology.ualberta.ca/esc.hp/gform.htm>. These must be completed in full, and **the original plus three copies of all documents** returned to the Chair of the Student Awards Committee by **15 February 2002**. The committee will evaluate all applications by 30 April 2002 and determine if, and to whom, grants will be awarded. The successful applicants will be informed immediately, thereby providing sufficient time for students wishing to start in the fall to make necessary arrangements. Grants must be used in the 12 months following the award.

Recipients must provide a short final report, including a documented list of expenses relative to the proposed budget, in the three months that follow the trip. Any allocated funds not spent must be returned to the Society.

All communications regarding these awards, including requests for applications, should be addressed to:

Dr. David R. Gillespie, Chair
ESC Student Awards Committee
Pacific Agri-Food Research Centre (Agassiz)
Agriculture and Agri-Food Canada
P.O. Box 1000
Agassiz, B.C., V0M 1A0

E-mail: GillespieD@em.agr.ca

Société entomologique du Canada, Subventions de recherche voyage au niveau des études supérieures, Invitation à soumettre des demandes

Préambule: Pour promouvoir les études supérieures en entomologie, la Société d'entomologie du Canada offre deux subventions de recherche-voyage, qui seront décernées chaque année lors d'un concours. Ces subventions ont pour objet d'aider les étudiants et étudiantes à élargir le champ de leur formation supérieure. Le montant accordé, qui peut aller jusqu'à 2 000 \$, doit permettre aux récipiendaires de suivre des cours ou d'effectuer des travaux portant sur leur sujet de thèse, cours et travaux qu'ils ne pourraient pas entreprendre autrement dans leur propre établissement et qui constituent un ajout important au programme de recherche prévu.

Admissibilité: Pour être admissible, un étudiant ou une étudiante doit :

- 1) être inscrit comme étudiant à temps complet au niveau des études supérieures
- 2) être membre actif de la Société d'entomologie du Canada

Présentation de la demande: La demande doit se présenter comme une proposition, dans laquelle le candidat ou la candidate fournit les informations suivantes : 1) sujet de la thèse; 2) revue des documents pertinents; 3) résumé de l'état d'avancement de la thèse; 4) description de la recherche ou des travaux à effectuer, avec les précisions suivantes : a) pertinence de l'objectif global de la thèse, b) raisons pour lesquelles les travaux ne peuvent être effectués à l'université d'attache et c) raisons expliquant pourquoi le candidat ou la candidate a choisi un lieu plutôt qu'un autre pour effectuer ses recherches; 5) budget du projet proposé et des explications concernant le mode de règlement des dépenses non couvertes par la bourse; 6) dates prévues pour le voyage et date à laquelle le candidat ou la candidate aura besoin de la subvention.

Le candidat ou la candidate doit joindre à sa demande : 1) un CV à jour; 2) une lettre de référence de son directeur; 3) au besoin, une lettre d'appui du scientifique ou chef de département de l'établissement où il ou elle souhaite mener à bien son projet.

Méthode d'évaluation: Le mérite scientifique de chaque demande sera évalué par un comité qui pourra soumettre certains projets à l'examen d'experts compétents de l'extérieur. Sur demande, un rapport des commentaires du comité des prix sera remis à chaque candidat et candidate.

Échéancier et marche à suivre pour la présentation des demandes: Les formulaires de demande, qui sont disponibles auprès du président du Comité des prix aux étudiants de la

Société ou sur notre site internet à l'adresse suivante:

<http://www.biology.ualberta.ca/esc.hp/gform.htm>. Ceux-ci doivent être complétés (**original, ainsi que trois copies de tous les documents**), et retournés au président du Comité, au plus tard le **15 février 2002**. Le comité évaluera toutes les demandes pour le 30 avril 2002 et il déterminera si des subventions seront accordées et, le cas échéant, à qui. Les heureux ou heureuses récipiendaires seront informé(e)s sans délai, de façon à ce qu'ils ou elles disposent de tout le temps voulu pour entamer leur projet dès l'automne suivant, si tel est leur souhait. Les subventions doivent être utilisées dans les 12 mois suivant leur attribution.

Dans les trois mois suivant leur voyage, les récipiendaires doivent remettre un court rapport final, incluant une liste des dépenses réelles accompagnées de pièces justificatives et comparées au budget proposé. Toute somme non dépensée doit être retournée à la Société.

Toute correspondance relative aux bourses, incluant les demandes de formulaires doit être adressée à:

Dr. David R. Gillespie, Président

Comité des prix aux étudiants de la SEC

Centre de recherches agricoles du Pacifique - Agassiz

Agriculture et Agroalimentaire Canada

Case Postale 1000, Agassiz, C.B., V0M 1A0

Courriel: GillespieD@em.agr.ca

W. John D. Eberlie Field Research Travel Award for Original Research into Ontario Insects

In memory of long-time member, W. John D. Eberlie, the Toronto Entomologists' Association is offering a research travel award of \$300 to assist graduate or undergraduate students conducting original field research into Ontario insects. The award is intended as a travel grant to defray costs of travel to field sites used for research. The award will be made on the basis of merit and quality.

Eligibility: Applicants must be a graduate or undergraduate student at an Ontario university and a member of the Toronto Entomologists' Association. Application forms are available from the T.E.A. The original application plus 3 copies must be submitted, postmarked no later than March 25, 2002.

Terms of the award: The recipient is expected to present their results at the T.E.A. symposium in March of the following year. The recipient is also expected to give a short report on how the funds were used to facilitate their aims as a naturalist or researcher. The report should include an abstract of the entire study and how the research funded by the award fits into their complete research program. The report and an abstract of their research, if possible, will be printed in Ontario Insects, the newsmagazine of the T.E.A.

Previous recipients: 2000-Aaron Deans, Faculty of Forestry, University of Toronto

An application form for the award, or for membership in the T.E.A. (\$10 per year for students) may be requested by writing to: Nancy van der Poorten, President T.E.A., 164 Morse Street, Toronto, Ontario M4M 2P8; Phone (416) 466-9013; e-mail: nmg.vanderpoorten@sympatico.ca

**Science Policy and Education / Politique scientifique et éducation
Canadian Endangered Species Legislation**

Dear ESC Member:

As I am sure you are aware, changes are being proposed to our Canadian Endangered Species Legislation. Many scientists across the country believe that the current proposed legislation is not strong enough to protect species in the long-term because of inadequate habitat conservation and poor scientific representation. As Chair of the ESC's Science Policy Committee, I want to make you aware of this issue and provide you with the opportunity to respond individually.

Many of you may have already been contacted through other networks and associations, requesting your signature along with other "Scientists for Science", on a letter to the Prime Minister alerting him to the inadequacies of the proposed legislation and your professional opinion on the need to strengthen it.

As a member of the Entomological Society of Canada, you may feel strongly about this issue and wish to support the 1,331 Canadian, American and other international scientists who have already signed the letter (<http://www.scientists4species.org/>). Ideas for letter contents can be found at <http://www.givethemahome.com/> (write a letter to the PM page) and his address of course is:

Prime Minister Jean Chretien
House of Commons
Langevin Block
80 Wellington St.
Ottawa, Ontario K1A 0A2

As Chair of the Science Policy Committee, I would also ask you to consider whether the Society, as a whole, should write a letter to the Prime Minister on this issue, from an entomological perspective? To date, the ESC has not made any official statement, but because of the nature of the legislation, it would be highly appropriate for us to do so, depending on what you as the membership think.

Thus, as well as informing you of this issue, I am also soliciting your input to help us make a broader decision on the need for further action by the ESC. Any input you can provide will also be helpful to the Science Policy Committee as we attempt to draw up guidelines for general media releases on other entomological issues of national importance.

Best wishes,
Sandy

Sandy M. Smith
Chair, Science Policy Committee & Second Vice-President, ESC
TEL: 416-978-5482 FAX: 416-978-3834
EMAIL: smith@larva.forestry.utoronto.ca

NEWS OF ORGANIZATIONS

ESA 2001 Annual Meeting



Town and Country Resort and Convention Center,
San Diego, CA, December 9-12, 2001

La réunion annuelle de l'ESA 2001 se tiendra au
Town and Country Resort and Convention Center",
San Diego, CA, du 9 au 12 décembre, 2001.

Program Symposia:

Application of New Genomic Technologies to Insect Science
Agricultural Entomology Beyond U.S. Borders: Achievements and Future Directions
Assessing Risk from Insect Management Technologies: The Odyssey Continues
Insecticidal Transgenic Crops I: Efficacy and Environmental Effects
Insecticidal Transgenic Crops II: Regulatory and Societal Issues
Insects in Marine and Saline Environments

See also <http://esa.confex.com/esa/2001/techprogram/programs.htm>

For more information, contact: / Pour plus d'informations, veuillez communiquer avec :

Mike Gray or Kevin Steffey, 2001 Program Co-Chairs

Turner Hall, Department of Crop Sciences

1102 South Goodwin Avenue

University of Illinois, Urbana, IL, 61801

Tel: (217) 333-6652, Fax: (217) 333-5245

m-gray4@uiuc.edu or ksteffey@uiuc.edu

XVth INTERNATIONAL PLANT PROTECTION CONGRESS

Beijing, China, 6-11 July, 2003



Sponsored by

The International Association for the Plant Protection Sciences

Organized by China Society of Plant Protection

The 15th IPPC will focus on the current progress in the plant protection sciences and technology, and its foreseeable development in the 21st century. To meet the new challenge facing plant protection in the new

millennium, the tentative theme of the Congress is "The First Great Gathering for Plant Protection in 21st Century". The researchers, crop protection consultants, practitioners, extension workers, representatives of regulatory agencies (quarantine, pesticides, biotechnology), administrators, and representatives of industry (chemicals, biologicals, genetic modification, diagnostics, monitoring equipment, software, etc.) are cordially invited to participate in the Congress.

The scientific program will include opening and closing lectures, plenary lectures, symposia, workshops and poster sessions on the following topics:

1. Extension of IPM Strategy in 21st Century
2. Resistance of Crops to Pests
3. Biocontrol
4. Chemical Pesticides (new products, application, resistance, pesticide management)
5. Biotechnology for Plant Protection
6. Plant Protection and Environment
7. Information Technology in Plant Protection and Pest Prediction
8. Ecological Regulation and Control of Farmland Pests
9. Plant Quarantine
10. Relationship and Co-evolution of Crops, Pests and Natural Enemies
11. Non-chemical Pest Control Techniques
12. Grain Crop Pest Management
13. Commercial Crop Pest Management
14. Orchard Pest Management
15. Forest Pest Management
16. Vegetable Crop Pest Management
17. Grassland Pest Management
18. Flowers and Lawn Pest Management
19. Farmland Weed Management
20. Farmland Rodent Management
21. Pest Management for Pre-growing and Post-harvesting

Local tours will be offered during the Congress, including The Great Wall, Ming Tombs, Forbidden City, The Temple of Heaven, Beijing Zoo, and The Summer Palace. An informal concert for music lovers is planned, as are; pre- and post-Congress tours: Silk Road, Three Gorges, the "Sunlight City" -- Lhasa (Tibet), Huangshan Mountains, Zhangjiajie National Park, Terra-cotta Army, Hainan Island, Guilin, West Lake of Hangzhou, others.

The Beijing International Convention Center (BICC), the venue for IPPC 2003, is a first class international venue with modern complex. (I recently visited Beijing, and my impressions of the city and the institutes were entirely positive. This safe, friendly and exciting city is an excellent venue. - DJ, Editor.) The official language of the Congress is English.

For further information, contact:

Ms. WEN Liping

Secretariat, 15th IPPC

c/o Institute of Plant Protection

Chinese Academy of Agricultural Sciences

Beijing 100094 China

Tel: 0086 10 62815913

Fax: 0086 10 62815913

Email: ippc2003@ipmchina.net

<http://www.ipmchina.net/ippc/ippcwelcome.html>

News, products, information and announcements

New book by a member:

Vincent, C., B. Panneton and F. Fleurat-Lessard. 2001 (eds.). Physical control methods in plant protection. Springer-Verlag/INRA, Heidelberg, Germany, 329 pp.

2001 Science Council of BC Award

Dr. Mark Winston, ESC member and Professor of Biological Sciences at Simon Fraser University, has been selected for the Eve Savory Award for Science Communication for his exceptional achievement in explaining science to the public and for increasing their awareness of it.

The second newsletter of the **DIVERSITAS - International Biodiversity Observation Year (IBOY) 2001 - 2002** is now available at

<http://www.nrel.colostate.edu/iboy/news/noviboynews.pdf>

The IBOY Newsletter contains information on current research findings and upcoming activities of IBOY Core Network Projects and the IBOY Secretariat, including international meetings, research expeditions, awards and funding opportunities.

The **American Institute of Biological Sciences**, AIBS, announced recently that **BioOne** has now reached its first major milestone: licensing and getting online the full text of 40 journals (including journals of entomological interest). More information is available at www.aibs.org. BioOne is a Web-based aggregation of research publications in the biological, ecological and environmental sciences.

BIOSIS (est. 1926; www.biosis.org) and CSA (Cambridge Scientific Abstracts) have combined to produce an enhanced index called **Zoological Records (ZR) Plus**, available through the CSA Internet Database Service. Other zoological database software of interest to entomologists is available from <http://www.biosis.org.uk/zrdocs/zoolinfo/software.htm>

TAXIS (Taxonomic Information System) Windows software is available from <http://taxis.virtualave.net/>. TAXIS can be used for development of interactive identification systems, keys, pictures guides, and collection databases.

Information on the **Integrated Taxonomic Information System (ITIS)** - "Système d'Information Taxonomique Intégré" (SITI) is available at <http://sis.agr.gc.ca/itis/>. ITIS is a partnership of U.S. and Canadian agencies, other organizations, and taxonomic specialists cooperating on the development of an on-line, scientifically credible, list of biological names focusing on the biota of North America.

Announcing **NSERC grants and research news** - a list of recipients (including some of our ESC members) of recent grants is shown at www.nserc.ca/media_e.htm

OUR HERITAGE . . . Who was John Clark?

The following is adapted from an article written for the Atlantic Forestry Centre in-house newsletter Out on a Limb in celebration of the 1999 Canadian Forestry Service centennial, "A century of innovative solutions".



He didn't have a middle name, and was known to everybody as Jock. His Scottish brogue was as thick as porridge, his humour as light as his moods could be dark. Jock was a character. But Jock was a genius.

He wasn't even an entomologist, but his work in tree physiology was intimately linked to contemporary forest entomological research at Fredericton and he was once a member of the ESC and the Acadian ES.

When I first met Jock in the mid 50s he had just returned to Fredericton from SUNY at Syracuse, New York, where his PhD thesis was acclaimed as outstanding. His work with the Forest Biology Lab. was to study water relations in trees with an eye towards birch dieback. That mysterious malady had no known cause, nor has it even to this day, and drought was just one of the suspected agents. Another was disease, perhaps insect-transmitted, another reason Jock studied the physiology (and Bill Varty studied the sucking insects) of birch. Jock also studied the physiological effects of balsam woolly aphid on fir trees and the effects of amount and timing of insect defoliation on growth and survival of various species of trees.

Jock was never a well man. Plagued by diabetes, ulcers, and goodness knows what else, he suffered wide swings of mood. "That's the trouble with you, Ken Fraser. I can't argue with you, you get so goddamned mad!", he once raged at the calm and collected Forest Insect Survey ranger. But when he laughed the whole vicinity lit up. Jock consumed great quantities of tea, adding another bag to the 2L Ehrlenmeyer flask, that had never, to my knowledge, been washed.

In winter we played bridge at lunch hour, players decided by a draw, and each day's difference of scores split between partners, accumulated and divided by times played, then plotted on a graph. During the last of goodness know how many ulcer operations, Jock's vagus nerve (the one that controls acid secretions) was cut. His long term average bridge score promptly went up 100 points.

Not many are still around who remember the big pot of venison stew the bridge group made in Jock's fume hood one fall. It took four large Bunsen burners to keep it simmering all morning. A wonderful aroma permeated the entire three-storey building. The best lunch break ever!

At a time when the cold war was running rather hot, a memo came down from Ottawa to be circulated among the professional staff. It stated that all correspondence with scientists behind the Iron Curtain was to be addressed and stamped, then placed, unsealed, in another envelope to be forwarded to Foreign Affairs for clearance. Jock brought this "Highly Confidential!" memo to coffee break and we all had a great laugh - then an idea. We found a

stick of government sealing wax (something not used for years), so we melted it over the envelope flap with a Bunsen burner and used Jock's university crest paperweight as the seal. Two potential problems: the seal read in mirror image - looking a bit like Cyrillic, and flaming drips from the wax had burned several holes in the envelope. We dutifully initialled our names on the circulation list, passed it on, and waited for the reaction. Nothing happened.

Jock died in the late 60s. It seems a long time ago, but the foundations of research on tree physiology had been well laid and it's importance to tree-insect relationships well appreciated at CFS Atlantic. It has since grown to a vigorous, world-recognized element in the search for better trees and better forests.

I wrote above that Jock was a genius. Perhaps not, but eccentricity is often associated with genius, and few if any managers are trained to cope with it and bring the best out of such people. I believe that is why Jock's PhD thesis was the high point of his career.

Doug Eidt, Fredericton

Books recently received for review: (Contact Publications Committee of the ESC)

McEwen, P., T.R. New and A.E. Whittington. 2001. *Lacewings in the Crop Environment*. Cambridge Press.

Corbet, P.S. 2000. *Dragonflies: Behavior and Ecology of the Odonata*. Cornell University Press.

Wheeler, A.G., Jr. 2001. *Biology of the Plant Bugs*. Cornell University Press

Capinera, J.L. 2001. *Handbook of Vegetable Pests*. Academic Press.

Job opening:

Applied/economic entomology background, at the Master's level, preferably someone strong in detection methodologies with some stats and/or epidemiology background. The work would involve reviewing quarantine pest survey procedures, making recommendations on their improvement and writing a manual. Not all the surveys are entomology but most are, and the pathology procedures in most cases are fairly well established (e.g. Plum Pox Virus, Potato Wart). A number of the surveys are forestry-related.

www.inspection.gc.ca/english/ppc/science/pps/ppshpe.shtml

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OUR HERITAGE: What was the "Debert Laboratory"?

The following article was written for the Atlantic Forestry Centre in-house newsletter Out on a Limb in celebration of the 1999 Canadian Forestry Service Centennial "A century of innovative solutions".

In 1951, a "Sub-Laboratory" was opened at Debert N.S., near Truro. At the time, federal forest research establishments in the Maritimes consisted of three separate entities, the Forest Biology Division and the Forest Pathology Division of Science Service of the Department of Agriculture, and the Dominion Forest Service of the Department of Northern Affairs and Natural Resources. Over the course of the short life of the Debert Lab, these organizations went through various transformations in various departments and merged to become the Canadian Forest Service. Initially the main function of the Lab was to house the Forest Insect Survey (FIS), which was a major program of the Forest Biology Division. It later became the Forest Insect and Disease Survey (FIDS). Eventually, like the Debert Laboratory, FIDS quietly disappeared.

The Hostess House

In the late summer of 1940, I was part of a small group of people watching a bulldozer clearing a road through a farmyard near Debert. The farm family was in shock. The army had just expropriated their farm in the initial process of constructing Camp Debert where upwards of 10,000 troops at a time trained during the Second World War. The farmhouse was enlarged to become "The Hostess House" where service personnel could relax, read, and write letters home. The camp was disbanded immediately following the end of the war, and the "The Hostess House," which stood empty, was to have an interesting role in the establishment and life span of the Debert Sub-Laboratory.

In 1947, the Forest Insect Survey (FIS), had opened a laboratory in Halifax, N.S. in close association with a research section of the Nova Scotia Dept. of Lands and Forests under Lloyd S. Hawboldt (*Bull. ESC* 29:89-91). Initially, Hawboldt acted as an advisor to Fred G. Cuming who was in charge of the FIS laboratory. Both organizations were housed in the Cathedral Barracks, a former military establishment near Dalhousie University. At the time, the idea of a sub-laboratory was that the staff would actually be located in the area they were responsible for, and in the case of Nova Scotia would also have close contact with N.S. Dept of Lands and Forests and the private forestry sector. There was only one other Federal Forestry Sub-Laboratory; it was located in Vernon B.C. with Doug Ross in charge. It was to suffer the same fate as the Debert Lab.

In 1950, Nova Scotia decided to move their research section to Debert to be housed permanently in the Hostess House, and so to keep in close contact with Hawboldt's team, FIS was obliged to move also. A small laboratory would be constructed that summer on a hill next to the Hostess House. Pending construction of the laboratory and renovations to the Hostess House, both establishments moved to the former army hospital at Debert where the Nova Scotia Department of Agriculture and the Nova Scotia Agricultural College had set up temporary laboratories and classrooms because of a serious fire on the permanent campus. N. S. Lands and Forests moved into the new laboratory in the fall of 1951, and the following fall FIS moved.



The Debert Laboratory and Insectary in 1951

Strife and the Birch Dieback

Birch dieback was a raging problem in the late '40s and early '50s, and was being addressed by the three federal research groups, mentioned above, as well as Hawbolt's Nova Scotian team. Serious rivalry soon developed between the federal teams and the provincial team.

At one point, when provincial researchers were secretly carrying out a series of original experiments, they were visited on two separate days by unannounced and uninvited federal researchers. The federal researcher on the second day had the colossal bad luck to arrive while "root washing" was under way ("Root washing" involves the use of high pressure streams of water from fire hoses to expose tree roots so that the proportion of dead and dying roots can be determined). The provincial researcher who was using the hose had lost a philosophical argument with the first visitor the day before. He apparently had had enough of visitors and promptly hosed down the latest intruder. Maybe the devil made him do it, or his natural exuberance was overwhelming, but the end result was that the federal man leapt into his car and drove back to Fredericton, soaking wet, in a towering rage.

Whatever the reason, some time later the Minister of Lands and Forests, A.W. MacKenzie and Dr. R. E. Balch, Officer-in-Charge of the Forest Biology Laboratory in Fredericton, met and divided up the respective responsibilities of both groups. The federal agencies would be responsible for forest biology research and the province would be concerned with extension activities (*i.e.*, technology transfer). Hawbolt stayed but his team transferred to the federal government.

High and Dry on a Hill

The Hostess House was torn down and the Debert Laboratory was left alone, high and dry, 14.5 km from Truro. In 1952, 14.5 km was quite a distance, even for far sighted administrators or "decision makers", as they came to be known. "Why can't we put this place on wheels and move it into Truro?" was asked by more than one visiting panjandrum.

So Debert became an instant nemesis to administrators even before the paint was

dry. The top floor of the building was intended to house the pathology division but Dr. Ken Greenidge, a tree physiologist, was the only one who came.

Getting Started

The FIS staff travelled back and forth to work in a sedan delivery. This was a vehicle that looked like a station wagon without the benefit of side doors, windows or seats in the back. The Dept of Agriculture had a fleets of these vehicles across the country. They bought a single piece of equipment, (Porto Electric Shears), and sent it to each establishment so they could cut holes in the side panels and install non-opening windows. Fred Cuming, as Officer-in-Charge, picked up the mail (since the address was Truro) and the staff in the morning; deposited mail at the post office and staff at their homes at the end of the day. The secretary sat in the front seat and the remaining staff members: me, Technical Officer 1; Gerry Moran, Chief Forest Insect Ranger; Lloyd Coady, Forest Insect Ranger; and Don Marks Technician (*Bulletin* 18:35-36), sat in the back on the floor, except for the lucky one whose turn it was to sit with Fred and the secretary in the front. Walter Harrington (*Bulletin* 32:77), also a Forest Insect Ranger, who lived in Glenholme on the far side of Debert, used his own car. He came early and left early so he could see the road because, along with various other parts of his car, the headlights had rusted out. (With time, transportation gradually improved.)

Mr. Peters who lived on a farm across the river opposite the Lab (Everyone was on a first name basis, but in deference to his age, Mr. Peters was always thus addressed. Whatever his first name was no one knew.), was the caretaker. He had lived a full life and by the time he got to us, was only able to sweep the floor. Consequently, the staff collectively, planted red pine and white spruce windbreaks, seeded the lawn, mowed what came up, put on the storm windows and shovelled the 600 yards of driveway when the plough was late, as it often was.

Mr. Peters' job was not always as simple as it might seem. Because the Lab was white and in the middle of a field, it attracted hordes of cluster flies intent on finding some place to overwinter. The flies entered the attic and crawled down the light fixtures and heating vents. On arriving at work, staff were greeted with floors covered with flies, the latter usually spinning around on their backs and buzzing. The highly visible ceiling light fixtures filled with flies which were then fed upon by a growing population of dermestid beetles. It took a couple of years or so before the building was sealed tightly enough to stem this annual invasion.

We settled in. Ken Greenidge came on staff with his technician Beth Pearo. Doug Morris came on as a technician to work with me. Mr. Peters retired and Phil Richards replaced him as caretaker. Phil soon became a *de facto* technician and eventually got properly classified as a technician. (Between Mr. Peters and Phil, the position was filled briefly by a philosophical caretaker who worked hard, but only between drinks, and once stated that "Nova Scotia is the only place a fella can make a living without working!")

Everybody helped everybody else. We tackled the winter moth problem (Fred and I), while Ken studied the physiology of yellow birch at the climate limit of its range in the Cape Breton Highlands. The rangers really ranged, collecting an almost overwhelming

numbers of samples.

Sit Where I Can See You

Researchers, whatever their individual failings may be, are generally an inquisitive lot. Once they get their nose into a problem, some but not all, tend to want to see it through, usually in their own way, in their own time, and if necessary surreptitiously. However, managers and superplanners of a full-scale research facility were duty bound to know, but not necessarily understand, the inner workings of its research plan. In simple terms, they need the assurance of knowing "what everybody is doing". They can at least reach this happy state when they can see everybody, but in the case of a sub-laboratory, they are certain that there are things going on that they don't know about and, for sure, transgressors lurk there who are wildly out of control. Perhaps through nervousness or insecurity, they resort to the "sit where I can see you" school of management.

The Octopus Period

The theory espoused is that isolation is bad. Close contact with other researchers is good, because of the presumed synergistic stimulation of ideas. All of which outweighs the advantage of easy access to study areas and clients, no matter how far away. So it was that the Debert Laboratory entered the octopus period. Tentacles reached out from Fredericton and snatched individuals out of their established and often efficient niches, back to the presumed centre of the universe. First to go was Gerry Moran, so instead of three rangers, there were two. After putting up a long and determined resistance, Ken Greenidge and Beth Pearo were finally ordered to Fredericton. Ken, who had established a well-organized study program, with close contacts in Nova Scotia and at Harvard University elected to transfer his studies to Dalhousie University. Beth Pearo went back to university and became a teacher. My turn was next and I was moved to Fredericton in 1964. Doug Morris declined and went into business for himself, setting up a successful appliance repair shop and dealership.

Goodbye

The laboratory survived two more years with a staff of six. During this time it continued to serve as a summer field station for researchers inclined to work in Nova Scotia. From its location on the hill, the Lab offered panoramic views of the Chiganois (mispronounced 'ishconish' locally) River, surrounding farmlands, marshlands and dikes, red pine plantations, forest, and the Cobequid Mountains. It was turned over to the province in 1966, and the now FIDS staff moved to Truro into office and laboratory space with only two windows. However, the insectary was not relinquished, and along with a trailer located on site, continued to serve as a field station. In 1973, Fred Cuming was moved to Fredericton. Finally the insectary was transferred to the province in 1980.

Accolades

Led by Fred Cuming, the staff at the Debert Lab developed ideal relations with the provincial Dept. of Lands and Forests to the point where all staff members were on a first

name basis (except Mr. Peters) with provincial staff, even with the Deputy Minister of Lands and Forests. Mutual projects with the province were carried out with little regard to "mandates". In addition, work on the physiology of yellow birch in relation to the birch dieback problem gained international recognition as did the studies involved with the successful biological control of the winter moth. The dedication of the FIDS staff was exemplary and they competed effectively with the Fredericton staff.

Walter Harrington's largely spare-time contribution to the knowledge of Lepidoptera in Nova Scotia was outstanding. The light trap at Debert, which Walter oversaw, has been praised by Dr. Tom D. Smith of the Nova Scotia Agriculture College as providing the most reliable data of any FIDS light trap in Canada. During the lifespan of the Lab, and its subsequent time as a field station, other problems were scientifically probed and prodded, namely: beech leafhopper (*Psilocorsis faginella*), a spruce adelgid, fall cankerworm, Bruce spanworm, white-marked tussock moth, spruce gall midge, and various pesticide and fertilizer applications related to Christmas tree production. Dutch elm disease was a problem just becoming serious in Nova Scotia. Fred Cuming and Charlie Smith (*Bulletin* 32:78) from the Fredericton Lab, along with Lloyd Hawbolt were successful in establishing advisory committees on Dutch elm disease control in most of the towns and cities of the province.

Epilogue

Of the original staff, Ken Greenidge, Walter Harrington, and Phil Richards have died. Don Marks, and Lloyd Coady are retired and living in Truro. Fred Cuming, Gerry Moran, and Doug Embree are retired and living in Fredericton.

FIDS disappeared in 1995 and the last team of FIDS rangers, after many narrow escapes from transfer to Fredericton, were finally moved. Art Doane and Tom Walsh moved in 1995-96. Wayne MacKay was last to leave in 1997.

In 1998 and 1999, CFS scientist Graham Thurston set up a field laboratory in a trailer near the site of the Hostess House while working on biocide control studies of the white-marked tussock moth. Fragmented functions of FIDS in Nova Scotia have been incorporated into CFS's Tree Health Network (coordinated from Fredericton), and Eric Georgeson's Integrated Pest Management group, NS Dept. of Natural Resources, which moved from Debert to Schubencadie in 1997.

Doug Embree, Fredericton
(Adapted for the *Bulletin* by Doug Eidt)

G.R. Underwood 1914-2001



Reg Underwood, forest entomologist, died at Fredericton 14 August 2001. He lived in Windsor Court, a seniors' residence, where he had enjoyed reasonable health until recently. He died of pancreatic and prostate cancer.

Reg was born at Upper Kennetcook, Hants Co., Nova Scotia, 4 April 1914. He graduated from the Normal School at Truro, and taught school before enlisting in the Royal Canadian Air Force in 1940. He was discharged with the rank of Pilot Officer at the end of the war in 1945.

Reg registered that fall in Forestry at the University of New Brunswick with a large post-war class of veterans under Dept. of Veterans' Affairs assistance. Many now-retired entomologists will identify with this period when the majority of students were veterans of World War II. They lived in temporary buildings that had been built to accommodate military training programmes facilitated by the universities across the country. At UNB it was called Alexander College, and with its esprit, was a community within a community. Reg received his BSc in forestry in 1949, and went on to earn his MSc under Carl Atwood at the University of Toronto.

Reg worked at the Forest Biology Laboratory, now part of The Canadian Forestry Service's, Atlantic Forestry Centre, in Fredericton. He was responsible for many aspects of the Forest Insect Survey, first under Ed Reeks, and later under Bob Forbes when Ed was named head of the now-defunct Winnipeg lab. As did many FIDS officers, Reg conducted an independent research programme. He was particularly interested in and published on adelgids of the genus *Pineus* spp. Including description of a new species on balsam fir. In addition to his important contributions to the annual reports of the Forest Insect and Disease Survey, he published on a variety of topics involving other forest insects.

Reg was an avid outdoorsman. He loved to hunt and fish, and although a modest, quiet spoken man, well designed questioning usually revealed that he had gotten his limit. He was a keen Barbershopper and was involved with Meals on Wheels and other volunteer work.

Reg is survived by his wife Margaret (Jewett), a former schoolteacher, now an Alzheimer's patient at Pine Grove Nursing Home in Fredericton. They had no children. Reg is interred at Perth-Andover, N.B., near Marg's original home.

As former colleagues of Reg's we have many fond memories involving Reg and Marg, at work and at play.

Doug Eidt & Bob Forbes, Fredericton

Book review

Kitching, R.L. *Food Webs and Container Habitats, The natural history and ecology of phytotelmata*, Cambridge University Press, 431 pp.

Before I had this book, if I thought to make a list of things that live in small pockets of contained water, I would have thought of mosquitoes in tree-holes, and the little communities of saprophagous flies that live in pitcher plants. It wouldn't have occurred to me that bamboo internodes, leaf axils, overlapping bromeliad leaves and so many kinds of containers would have such a diversity of species and complexity of structure. A natural tendency is to focus on the names of the players, which we can at least conceive of knowing eventually, rather than assemble models of the interactions of the so-called phytotelm organisms that persist in these nooks and crannies. However, Kitching does just that, working out the web of relationships in detail and with constant interplay of field data with theory and hypothesis. The book begins with clear descriptions of the physical foundations that allow not only the survival of container fauna, but the development of richly complicated food webs. He speaks from a wealth of personal knowledge of the subject organisms in many field situations. If like me you are much more convinced by the logic of a respectable field biologist than by a few differential equations prepared by someone who once saw the animal, then you will enjoy watching the author use his knowledge to doggedly construct and quantify the trophic relationships and food web statistics for various phytotelmata (containers). He works "from field data to food webs" with a sceptical edge, comparing cases from diverse regions. Many investigations of this kind in ecology end up overgeneralizing, but Kitching resists it. As he works out the logic and the food webs, he voices concerns such as "species assumed to behave trophically like close relatives may not, in fact, do so". Hooray, I say; every overly optimistic (or careless) researcher who lumps ecological subjects by family or even genus should have to write that on the board a hundred times. "Trophic links assigned on the basis of arranged 'encounters' may not occur in field situations". Every petri-dish entomologist and ecologist should have to repeat that mantra. "Assumed trophic links may in fact occur in the field but be so rare as to be irrelevant in any process of generalisation". That last statement explains some of Kitching's very quantitative and step-wise approach. He rarely seems to accept the mere facts of occurrence and feeding as evidence for a food web linkage. He describes particular food webs in detail, from saprophages to top predators, and then examines variation in food web structure across geographical regions. In the process, the reader sees that phytotelmata are excellent subjects for not only learning about some fascinating biodiversity, but as testing grounds for ideas and variations on island biogeography, competition, predation, connectance, food chain length, metapopulation dynamics, and climate change. As much as Kitching works on food web structure and statistics, he comes back to two basic questions: "The underlying arguments and discussion are no more than long and convoluted ways of answering two deceptively simple questions which may occur to us as we peer into a particular container habitat:", and those are why is this particular animal here, now, and why is this particular food web present here, now.

D. Johnson, Lethbridge

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