

Bulletin

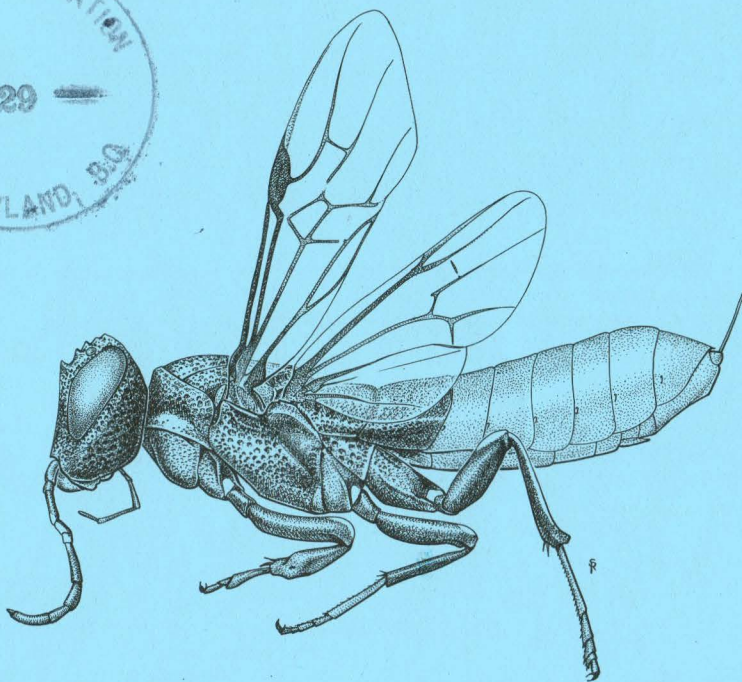
Entomological Society
of Canada

Société d'Entomologie
du Canada

Volume 31

No. 1

Mar/mar 1999



Entomological Society of Canada
Société d'Entomologie du Canada

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

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

Illustrated on the front cover is a *Orussus occidentalis* (Cresson) (Hymenoptera: Orussidae). These rare and unusually sculptured Hymenoptera are a link between phytophagous sawflies and the thin-waisted Apocrita. They are the only parasitic Symphyta known. The family is ancient and well represented as fossils. [Habitat illustration by Susan Rigby, Ottawa, Ontario, courtesy of H. Goulet and J. Huber.]

La page couverture illustre l'adulte de *Orussus occidentalis* (Cresson) (Hymenoptera: Orussidae). Ces hyménoptères rares aux ornements inusités constituent un lien entre les mouches à scie polyphages et les Apocrites à taille fine. Ce sont les seuls Symphytes parasitiques connus. Cette famille est ancienne et est bien représentée dans les fossiles. [L'illustration par Susan Rigby, Ottawa, Ontario, une courtoisie de H. Goulet and J. Huber.]

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

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

SOCIETY BUSINESS/AFFAIRES DE LA SOCIÉTÉ

Notice of Executive Council Meeting

The mid-term meeting of the Executive Council will be held at the Entomological Society of Canada office in Ottawa on April 17, 1999.

La réunion de mi-session du Conseil Exécutif aura lieu au Siège social de la Société d'entomologie du Canada le 17 avril, 1999.

49th Annual General Meeting

The Annual General Meeting of the Entomological Society of Canada will be held at the *Radisson Hotel* in Saskatoon on September 26, 1999.

La réunion annuelle générale de la Société d'entomologie du Canada aura lieu au *Radisson Hotel* à Saskatoon, Sask., le 26 septembre 1999.

Governing Board Meeting

The Annual Meeting of the Governing Board will be held at the *Radisson Hotel* in Saskatoon on September 25, 1999.

La réunion annuelle du conseil d'administration se tiendra au *Radisson Hotel* à Saskatoon, Sask., le 25 septembre 1999.

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'adresse suivante:

Dr. Rick West
Box 515, Portugal Cove
Newfoundland A0A 3K0
phone and fax: 709-895-2734
email: 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 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

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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. 31(2)) is **May 1, 1999**

La date limite pour recevoir vos contributions pour le prochain numéro (Vol. 31(2)) est le **1 mai 1999**

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

Radisson Hotel, Saskatoon, Saskatchewan, September 26-29,
1999

**Theme: Managing the Millennium Bug
'Entomology in the 21st Century'**

TENTATIVE PROGRAM

Saturday, September 25

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

Sunday, September 26

10:00-16:00 Registration
13:00-17:00 Workshop (Lygus bug)
13:00-17:00 Workshop (Preparing Grant Applications: Student Affairs Committee)
19:30-20:30 Students meet the Board
20:30-23:00 Mixer / Wine and Cheese

Monday, September 27

08:00-10:00 Registration
08:30-10:00 Opening Remarks, ESC Awards, Gold Medal Address
10:30-12:00 Plenary Lectures: Global and Local Perspectives on Managing the Millennium
 Bug (Dr. David Pimentel, Cornell University)
13:30-15:00 Contributed Papers, Student Papers (President's Prize)
14:30-16:00 Poster Session (presenters in attendance)
16:00-17:00 Heritage Lecture
19:00-21:00 Workshop (Internet Resources for Entomologists)
20:00-22:00 President's Reception (by invitation only)

Tuesday, September 28

08:30-12:00 Symposium I (Pest Forecasting). Organizers: O. Olfert and D. Johnson
 Presenter: R. Hopkinson, D. Johnson, K. Klein, D. Lactin, TBA
13:30-16:30 Contributed Papers
13:30-16:30 Workshop (Leafhopper)
16:30-18:00 Entomological Society of Canada Annual General Meeting
19:00-23:00 Cocktails and Banquet

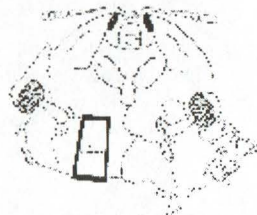
Wednesday, September 29

09:00-12:00 Symposium II (Biorational/Biotechnological Pest Control). Organizer: G.
 Khachatourians. Presenters: J-L. Schwartz, P. Marone, B. Anderson, TBA
09:00-12:00 Contributed Papers/ Additional Workshops?
12:30-14:00 Entomological Society of Canada Governing Board Meeting

For additional information, please contact:

Dwayne Hegedus (General Chair)	or	Cedric Gillott (Program Chair)
Agriculture and Agri-Food Canada		Department of Biology
107 Science Place		University of Saskatchewan
Saskatoon, SK		112 Science Place
S7N 0X2		Saskatoon, SK, S7N 5E2

"Managing The Millennium Bug"



E.S.C. - E.S.S.
SASKATOON 1999

Réunion commune entre
la Société d'Entomologie du Canada et
la Société d'Entomologie de la Saskatchewan.

Hôtel Radisson, Saskatoon, Saskatchewan, du 26 au 29
septembre 1999

Thème: Gérer les ravageurs du nouveau millénaire
"L'Entomologie au 21ème siècle"

PROGRAMME PROVISOIRE

"Managing The Millennium Bug"



E.S.C. - E.S.S.
SASKATOON 1999

Samedi 25 septembre

08:30-17:30
SEC

Réunion du comité directeur de la

Dimanche 26 septembre

10:00-16:00
13:00-17:00
13:00-17:00
19:30-20:30
20:30-23:00

Inscriptions
Réunions de travail (Les Lygus)
Réunions de travail (Préparer des demandes de bourses: Association étudiante)
Rencontres étudiants / comité directeur
Soirée "vins et fromages"

Lundi 27 septembre

08:00-10:00
08:30-10:00

10:30-12:00

13:30-15:00
14:30-16:00
16:00-17:00
19:00-21:00
20:00-22:00

Inscriptions
Discours d'ouverture, remise des prix SEC et attribution de la médaille d'or pour accomplissements exceptionnels au sein de la SEC.
Sessions plénières : Perspectives locales et globales sur la gestion des ravageurs du nouveau millénaire (David Pimentel, Université de Cornell)
Présentations orales (régulières et prix du Président)
Présentations des posters (auteurs présents à côté de leurs posters)
Discours historique
Réunions de travail (l'Internet au services des entomologistes)
Réception présidentielle (sur invitations seulement)

Mardi 28 septembre

08:30-12:00

13:30-16:30
13:30-16:30
16:30-18:00
19:00-23:00

Symposium I (Prévision des infestations dues aux ravageurs).
Organisateurs : O. Olfert and D. Johnson.
Conférenciers : R. Hopkinson, D. Johnson, K. Klein, D. Lactin.
Présentations orales
Réunions de travail (les cicadelles)
Assemblée générale annuelle de la SEC
Cocktails et banquet

Mercredi 29 septembre

09:00-12:00

09:00-12:00
12:30-14:00

Symposium II (Lutte intégrée et contrôle biotechnologique des ravageurs). Organisateur : G. Khachatourians.
Conférenciers : J-L. Schwartz, P. Marone, B. Anderson
Présentations orales / Réunions de travail
Réunion du comité directeur de la SEC

Pour plus d'informations, contactez :

Dwayne Hegedus (coordinateur général)
Agriculture et Agroalimentaire Canada
107, Science Place
Saskatoon, SK
S7N 0X2

ou

Cedric Gillott (coordinateur du programme)
Département de biologie
Université de la Saskatchewan
112, Science Place
Saskatoon, SK, S7N 5E2

**Joint Meeting of the
Entomological Society of Canada and the
Entomological Society of Saskatchewan**

"Managing The Millennium Bug"

Radisson Hotel and Conference Centre, Saskatoon (SK), Sept.
26-29, 1999

REGISTRATION FORM

Name: _____
Last First Initial(s)

Title: _____

City: _____ Province/State: _____ Postal Code: _____

Telephone: _____ Fax: _____ E-mail: _____

Registration fees (\$Cdn) include banquet and GST.

	Amount Paid
Registration, regular member (\$125)	_____
Registration, non-member (\$145)	_____
Registration, student member (\$65)	_____
Registration, student non-member (\$75)	_____
Registration, accompanying member (\$60)	_____
Name of accompanying person _____	

Activities for participants and their guests

Western Development Museum (\$10 per person) _____
Wanuskewin Heritage Park (\$10 per person) _____

Late registration: after August 6, 1999, add \$25 _____

Total Amount Due _____

Please make cheque payable to 'ESC Meeting 1999'

Remember to register for the associates program when registering. For more information on activities, refer to the list of 'activities for participants and their guests'.

Accommodations: A block of rooms with one Queen-size or two double beds (\$85/night) has been reserved for participants at the Radisson Hotel. Cut off date to make reservations is Aug. 24, 1999. To obtain this reduced rate indicate that you are participating in the "Entomological Society National Meeting" when making reservations. Any groups requiring additional meeting rooms should contact conference organizers in advance.

Reservations are available through:

Return this form and registration fee to:

Radisson Hotel Saskatoon
405-20 th Street East
Saskatoon, SK S7K 6X6
Ph: 306-665-3322
Fax: 306-665-5531

Juliana Soroka
Agriculture and Agri-Food Canada
107 Science Place
Saskatoon, SK, Canada, S7N 0X2
Ph: 306-956-7294, Fax: 306-956-7247
E-mail: Sorokaj@em.agr.ca

Réunion commune entre
la Société d'Entomologie du Canada et
la Société d'Entomologie de la Saskatchewan.

"Managing The Millennium Bug"

Centre de conférences de l'hôtel Radisson, Saskatoon (SK), du 26
au 29 septembre 1999

BULLETIN D'INSCRIPTION



E.S.C. - E.S.S.

SASKATOON 1999

Noms : _____
Nom de famille Prénoms Initiales

Titre : _____

Ville : _____ Province / état : _____ Code postal : _____

Téléphone : _____ Télécopieur : _____ Adresse électronique : _____

Frais d'inscription (\$Cdn) incluant le banquet et la TPS.

Sommes dues

Frais d'inscription :	- membre régulier	(\$125)	_____
	- non membre	(\$145)	_____
	- étudiant membre	(\$65)	_____
	- étudiant non membre	(\$75)	_____
	- accompagnateur	(\$60)	_____

Nom de l'accompagnateur : _____

Activités pour les participants et leurs hôtes

1. Western Development Museum (\$10 par personne) _____
2. Wanuskewin Heritage Park (\$10 par personne) _____

Inscription tardive (après le 7 août 1999), supplément de \$25 : _____

Total dû : _____

Veuillez émettre les chèques à l'ordre de "ESC 1999", s.v.p.

N'oubliez pas de vous inscrire aux programmes associés au congrès au moment de l'inscription. Pour plus d'informations sur ces activités, veuillez consulter la liste "activités pour les participants et leurs hôtes".

Logement : Un groupe de chambres comportant chacune un lit double (\$85 par nuit) a été réservé à l'Hôtel Radisson pour les participants.

Les réservations peuvent être faites auprès de :

Retournez ce bulletin d'inscription accompagné de votre paiement à :

Hôtel Radisson de Saskatoon
405-20 th Street East
Saskatoon, SK
S7K 6X6
Ph: 306-665-3322
Fax: 306-665-5531

Juliana Soroka
Agriculture et Agroalimentaire Canada
107, Science Place, Saskatoon, SK, Canada
Tél : 306-956-7294
Télécopieur : 306-956-7247
Adresse électronique : Sorokaj@em.agr.ca

**Joint Meeting of the
Entomological Society of Canada and the
Entomological Society of Saskatchewan**

Radisson Hotel and Conference Centre, Saskatoon (SK),
September 26-29, 1999

**FORM FOR SUBMITTED PAPERS, STUDENT PAPERS,
AND POSTER PRESENTATIONS**

DEADLINE: Postmarked June 30, 1999



**E.S.C. - E.S.S.
SASKATOON 1999**

Information required: Author's names, name of presenter, address, title and abstract

Abstracts should be 50 words or less; submission by e-mail or on diskette would be much appreciated.
If possible please provide your abstract in both official languages.

Category of presentation (please check):

Regular _____ **President's Prize*** _____ **Poster** _____

**Students are eligible for the President's Prize if they meet the following criteria:*

- You are enrolled in a graduate degree program or have graduated from a program less than six (6) months prior to the meeting.
- You must be registered at the meeting.
- You must be the primary investigator of the paper.
- You must give and oral presentation.

Oral presentation (regular, President's Prize): 12 min + 3 min discussion. Both slide and overhead projectors will be provided. Slides should be provided in a carousel.

Posters: Maximum dimensions: 1.2 m X 1.2 m (width and height)
Attachment to panel:

Please return to:

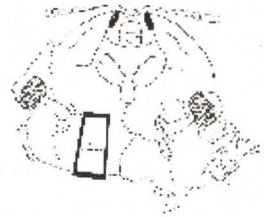
Dr. Cedric Gillott (Scientific Program Chair),
Department of Biology
University of Saskatchewan
112 Science Place
Saskatoon SK, S7N 5E2;
gillott@duke.usask.ca

Réunion commune entre
la Société d'Entomologie du Canada et
la Société d'Entomologie de la Saskatchewan.

"Managing The Millennium Bug"

Centre de conférences de l'hôtel Radisson, Saskatoon (SK), du
26 au 29 septembre 1999

**BULLETIN D'INSCRIPTION POUR LES ARTICLES
ET POSTERS À SOUMETTRE.**



E.S.C. - E.S.S.
SASKATOON 1999

DATE LIMITE : le 29 juin 1999 (le timbre de la poste faisant
foi)

Renseignements demandés : Noms des auteurs, nom du présentateur, adresse, titre et résumé.

Les résumés doivent être composés au maximum de 50 mots. La soumission des manuscrits par courrier électronique ou par disquette serait appréciée. **Veuillez, si possible, envoyer votre résumé dans les deux langues officielles.**

Mode de présentation (cochez s.v.p) :

Régulier _____ **Prix du Président*** _____ **Poster** _____

* Les étudiants qui remplissent les conditions suivantes sont éligibles pour le Prix du Président :

1. Vous êtes engagés dans un programme d'études graduées ou vous avez été diplômés dans les 6 mois précédant le congrès.
2. Vous devez être inscrit au congrès.
3. Vous devez être le chercheur principal des travaux présentés dans le manuscrit.

Présentations orales (régulières ou prix du Président) : 12 minutes de présentation suivies de 3 minutes de discussion. Des rétroprojecteurs et des projecteurs de diapositives seront fournis aux présentateurs. Veuillez préparer vos diapositives dans un carrousel.

Posters :
- Dimensions maximales : 1.2 m X 1.2 m (largeur x hauteur)
- Panneau d'affichage :

Veuillez retourner le formulaire à :

Dr. Cedric Gillott (Président du programme scientifique)
Département de Biologie
Université de la Saskatchewan
112 Science Place
Saskatoon, SK, S7N 5E2
Gillott@duke.usask.ca.

**Joint Meeting of the
Entomological Society of Canada and the
Entomological Society of Saskatchewan**

"Managing The Millennium Bug"

Radisson Hotel and Conference Centre, Saskatoon (SK),
September 26-29
1999



ACTIVITIES FOR PARTICIPANTS AND THEIR GUESTS:

Sunday, September 26: Wanuskewin Heritage Park.

**E.S.C. - E.S.S.
SASKATOON 1999**

The first people who lived in the Opimihaw valley long ago left traces of a lifestyle that is now taught and implemented at the park today. Information about the past, which could not be learned about from artifacts, were passed down through time in legends and stories told by the Elders. Your guide will introduce you to many culturally appropriate teachings of First Nations people. Regular features include a 25 minute slide presentation about the Park and archeological dig, restaurant, art and craft gallery and 6.2 km of walking trails. For more information view the web site at :
"<http://198.169.147.125/~wanuskewin/index.html>".

Monday, September 27: Western Development Museum; 1910 Boomtown.

Agriculture and Transportation galleries combine with Boomtown to provide a colourful and comprehensive look at western development in Saskatchewan. From an isolated, underdeveloped land, Saskatchewan developed thriving communities like Boomtown. This is how the Saskatchewan pioneer spirit conquered the isolation of the far west. Come and admire the largest indoor exhibit of pioneer agricultural tractors in Saskatchewan. While you are there, stroll through Saskatoon's only vintage car display. As well, stop by the Boomtown Cafe. This working exhibit offers delicious home cooked flavour and variety, tantalizing aroma of home baking in 1910 decor, and daily specials. For more information view the web site at '<http://www.wdmuseum.sk.ca/stoon.html>'.

Suggestions for Restaurants, Bars, Nightclubs and other Activities available on site.

For further information please contact:

Larry Grenkow,
Agriculture and Agri-Food Canada
107 Science Place
Saskatoon, SK, Canada, S7N 0X2
ph: 306-956-7293, fax: 306-956-7247
E-mail: GrenkowL@em.agr.ca

Réunion commune entre
la Société d'Entomologie du Canada et
la Société d'Entomologie de la Saskatchewan.

"Marking The Millennium Bug"

Centre de conférences de l'hôtel Radisson, Saskatoon (SK), du
26 au 29 septembre 1999

ACTIVITES POUR LES PARTICIPANTS ET LEUR(S)
HOTE(S)



Dimanche 26 septembre : Wanuskewin Heritage Park.

E.S.C. - E.S.S.

SASKATOON 1999

Les premières populations habitant la vallée de l'Opimihaw ont laissé, année après année, de nombreux vestiges et traces de leur passage. Le parc de Wanuskewin, situé sur le site archéologique de la vallée de l'Opimihaw, expose les vestiges de ce passé et tente d'expliquer la façon de vivre de ces anciens habitants. L'origine et l'utilisation de certains sites n'ont pas encore été comprises et les nombreuses informations sur cette époque ne nous sont parvenues que par l'intermédiaire de légendes ou d'histoires transmises par les Anciens, de génération en génération. Pendant cette visite, votre guide vous fera connaître différents aspects de la culture des premières nations. Vous pourrez aussi assister à un diaporama de 25 min sur le musée et les fouilles archéologiques, visiter la galerie d'art et d'artisanat indiens, ou vous restaurer. 6.2 km de chemins pédestres vous feront découvrir le parc et le site archéologique. Pour plus d'informations, veuillez consulter le site : "<http://198.169.147.125/~wanuskewin/index.html>".

Lundi 27 septembre : Western Development Museum : 1910 Boomtown

La reconstitution d'une ville-champignon et des galeries présentant l'évolution de l'agriculture et des moyens de transports vous donneront un aperçu des changements qui se sont effectués en Saskatchewan depuis le début du siècle. Ce musée vous montre comment l'esprit pionnier a conquis les grandes étendues vierges de l'Ouest canadien. Venez admirer la plus grande exposition de la Saskatchewan sur les machineries agricoles des pionniers de l'Ouest et les voitures de collection de ce siècle. N'oubliez pas de vous arrêter au café Boomtown pour y déguster une cuisine familiale dans un décor des années 1910. Pour plus d'informations, veuillez consulter le site : "<http://www.wdmuseum.sk.ca/stoon.html>".

Des adresses de restaurants, bars et clubs ainsi que des idées pour d'autres activités seront également disponibles sur place.

Pour plus d'informations, contactez :

Dwayne D. Hegedus
Agriculture et Agroalimentaire Canada
107 Science Place
Saskatoon, SK, S7N 0X2, Canada
Tél : 306-956-7667
Télécopieur : 306-956-7247
Adresse électronique : Hegedusd@em.agr.ca

**Entomological Society of Canada/Société d'entomologie du Canada
Committees and Representatives for 1997-1998/Comités et représentants 1997-1998**

A-Standing Committees/Comités permanents

Nominating/Nominations

H. Danks, Chair, Ottawa
R. Cannings, Victoria
T. Wheeler, St. Anne de Bellevue
L. Gilkeson, ex officio, Victoria

Elections/Elections

R. Hallett, chair
D. Stanley-Horn
L. Gilkeson, ex officio, Victoria

B-Continuing Committees/Comités en cour

Achievement Awards/Prix d'excellence

D. Johnson, chair, Lethbridge
C. Vincent
P. MacKay
L. Gilkeson, ex officio, Victoria

Bilingualism/Bilinguisme

L. Royer, chair, Corner Brook
L. Gilkeson, ex officio, Victoria

Bylaws, Rules and Regulations/Règlements

M. Goettel, chair
N.J. Holliday, Winnipeg
L. Gilkeson, ex officio, Victoria

Finance/Finance

J.E. O'Hara, chair, Ottawa
Parker, Ottawa
G. A. P. Gibson, ex officio, Ottawa
(R. Footit, acting)
L. Gilkeson, ex officio, Victoria

Headquarters/Siège social

B.D. Gill, Chair, Ottawa
J.M. Cumming, Ottawa
G.A.P. Gibson, ex officio, Ottawa
L. Gilkeson, ex officio, Victoria

Heritage/Héritage

D.C. Eidt, Fredericton, Chair
P. Riegert, Regina
E.C. Becker, Ottawa
L. Gilkeson, ex officio, Victoria

Insect Common Names/Noms communs d'insectes

J. Garland, chair, Ottawa
H. Chiasson, Montreal
L. Gilkeson, ex officio, Victoria

Marketing/Comité du marketing

L.M. Dosdall, Vegreville
T.P. Danyk, Lethbridge
K. Floate, Lethbridge
D.R. Gillespie, Agassiz
L. Gilkeson, ex officio, Victoria

Membership/Adhésion

R. Bennett, chair, Saanichton
AES: R.F. Smith
ESBC: T.L. Shore, Victoria
ESM: R.J. Lamb
ESO: D.B. Lyons
ESS: O. Olfert
SEQ: J. Brodeur
Troy Danyk
L. Gilkeson, ex officio, Victoria

Publications/Publications

S.M. Fitzpatrick, Chair, Agassiz
G. Boivin, St Jean sur Richelieu
D.C. Eidt, Fredericton
A.B. Ewen, Dalmeny
A. Keddie, Edmonton
R. Bennet, Victoria
Gilkeson, ex officio, Victoria
J. Turgeon, ex officio, Sault Ste. Marie
H. Barclay, ex officio, Victoria
B. Lyons, ex officio, Sault Ste. Marie
L. Gilkeson, ex officio, Victoria

Science Policy and Education/Politique scientifique et éducation

J.R. Spence, Chair, Edmonton
K.G. Davey, Downsview
P. Kevan, Guelph
R.F. Smith, AES, Kentville
D.W. Langor, ESA, Edmonton
T.L. Shore, ESBC, Victoria
R.J. Lamb, ESM, Winnipeg
D.B. Lyons, ESO, Sault-Ste-Marie
O. Olfert, ESS, Saskatoon
C. Cloutier, SEQ, Québec
R. Footit, ex officio, Ottawa
L.A. Gilkeson, ex officio, Brentwood Bay
D.L. Johnson, ex officio, Lethbridge

Student Affairs/Affaires étudiantes

D. Gingras, Chair, Montréal
T.P. Danyk, Lethbridge
P. Lomic, Toronto
S. Lindgren, ex officio, Prince George
L. Gilkeson, ex officio, Victoria

Student Awards/Prix aux étudiantes et étudiants

S. Lindgren, Chair, Prince George
L. Hollett, Corner Brook
D. Quiring, Fredericton
B. Mitchell, Edmonton
D.C. Currie,
D.J. Larson
T.A. Wheeler, Ste. Anne de Bellevue
L. Gilkeson, ex officio, Victoria

Web/Web

D.B. Lyons, Chair, Sault-Ste-Marie
T.P. Danyk, Lethbridge
D.L. Johnson, Lethbridge

W. Riel, Victoria
L. Gilkeson, ex officio, Victoria

C Ad hoc Committees/Comités ad hoc

Joint Meeting Document

T. Shore, Chair, Victoria
J. Sweeney
L. Gilkeson, ex officio, Victoria

Bulletin and Website Content

R. Lamb, Chair
V. Nealis
L. Gilkeson, ex officio, Victoria

National Insect Commemoration

H. Philip, Chair
P. Kevin
J. Sutcliffe
L. Gilkeson, ex officio, Victoria

Call for Nominations - Second Vice President & Director-at-Large

Nominations for Second Vice President and Director-at-Large must be signed by three members in good standing and received by **30 April 1999** by the Secretary, Dr. Rick West.

Nominations pour Deuxième Vice-Président et Directeur doivent être signée par trois membres de la Société et envoyée avant le **30 avril 1999** au secrétaire, Dr. Rick West.

News from the Student Affairs Council (SAC)

The year 1998 was busy for the Student Affairs Committee (SAC). One of our accomplishments was the organization of a completely bilingual Linnean Games during the ESC / ESQ joint meeting at the Chateau Frontenac in Quebec City. Three teams of four students competed against each other to answer interesting questions related to entomology. The winning team consisted of Brian Aukema, Simon Lachance, Dean Morewood, and Jean-François Mouton. Again Congratulations !

We thank Charles Vincent who acted as quizmaster, and Jacques Brodeur and Dan Johnson who acted as judges. We are grateful for the assistance provided by the Bilingualism Committee of the ESC and Charles Vincent in translation of questions and other text. The SAC acknowledges also the Organization Committee of the meeting for their assistance in facilitating and providing the material needed to hold the Linnean Games.

The year 1999 begins with a new Chair of the SAC, Daniel Gingras. I express my gratitude to my predecessor, the sympathetic and dynamic Troy Danyk for all the work he accomplished, for his ideas, for his energy and for his leadership. The SAC is composed of an interesting team willing to serve the

students and represent their interest. If you have any ideas, projects, concerns that relate to students of the ESC, then please let us know and we may be able to help or to support you.

The objectives that the SAC would like to achieve by the end of 1999 are as follows:

1. Contribute to the effort of increasing student membership.
2. Inform students that present a scientific communication in the President's Prize competition about the criteria on which their communication will be judged.
3. Involve PhD students in scientific symposia.
4. Organize an event (likely a workshop) for the 1999 meeting in Saskatoon.

The 'team' forming the SAC consists of: Daniel Gingras, acting as the chair (McGill University) Troy Danyk (Simon Fraser University) David Barrett (University of New Brunswick) Paul Lomic (University of Toronto) Louis Morneau (University of Alberta)

Daniel Gingras can be contacted at:

Agriculture and Agrifood Canada, 430 Boul. Gouin, St-Jean-sur-Richelieu, Québec J3B 3E6
Tél. (450) 346-4494 ext. 271; Fax. (450) 346-7740; e-mail: Thibodeaud@em.agr.ca

NEWS OF ORGANIZATIONS

Biological Survey of Canada (Terrestrial Arthropods)

The Survey's expert Committee met in Ottawa on 22-23 October 1998. A more detailed report of the meeting is available in the Newsletter of the Biological Survey of Canada (Terrestrial Arthropods) 18(1), 1999.

Scientific projects

1. Arthropods of Canadian grasslands

Dr. Bert Finnermore reminded the Committee that the final year of a three-year project is in progress at Grasslands National Park; the coordination of identifications is in progress. Dr. Finnermore's interest and involvement in arthropods at CFB Suffield continues. The arthropod data from Suffield are being used to put forward the case for maintaining the National Wildlife Area on the base.

2. Seasonal adaptations

A paper about the roles and properties of trehalose was accepted for publication. A paper on life cycles in polar arthropods was presented at the European Workshop on Invertebrate Ecophysiology. Work is proceeding on papers on life cycles that were planned a few years ago but deferred in order to finish the Yukon book. Dr. Hugh Danks will be presenting an invited lecture at an International Japanese-Czech New Year Seminar in Entomology on Seasonal Adaptations, attended by many scientists who work on subjects related to the Survey's project.

3. Other projects

Two potential scientific projects, on insects of a large river in northern Keewatin and on the insects of Newfoundland, were discussed, with further details expected at the next meeting. Ongoing projects on keys to the families of arthropods in Canada, arctic invertebrate biology, and boreal arthropods were also reviewed.

Other scientific priorities

1. Arthropods of soils

Dr. Valerie Behan-Pelletier noted that a report on Soil Biodiversity in Canadian Agricultural Soils

is being prepared through Agriculture and Agri-Food Canada for the Convention on Biodiversity. Work continues on Soil Biodiversity and Ecosystem function (including mites and Collembola) in U.S. tall-grass prairie funded by NSF. A parallel project is going forward on upland grassland in Scotland. Many students, including some from Victoria and Calgary, took a course on oribatid mites at the Ohio State University in summer 1998. The Database of Ecological Research Projects (DERP) will be released in the fall of 1998.

Dr. Dac Crossley retired in October 1998 and a conference on: "Invertebrates as Webmasters in Ecosystems" was held to celebrate his retirement. The 1998 joint meeting of the Entomological Society of America and the American Phytopathological Society in Las Vegas has a symposium on Soil Health that includes a paper by Dr. Behan-Pelletier and Dr. Finnermore on "Assessing soil arthropods - implications for soil health".

2. *Old-growth forests*

It had been decided that plans for a symposium and written synthesis to bring together the work that has been done pertaining to old-growth forests are premature. The idea will be considered later. Dr. Richard Ring and Dr. Geoff Scudder reviewed studies in old-growth forests in B.C. The Rocky Point canopy access system and specialized microclimatic station are being taken over by the University of Victoria. Canopy access systems in the Carmanah old-growth forest (now a park) have been dismantled.

3. *Invasions and reductions*

Dr. Steve Marshall reported that plans for a symposium in the year 2000 continue to develop and a draft list of potential speakers has been compiled. Invasions and reductions are increasingly topical because of concern about new economically important invaders and because of public interest in endangered species.

4. *Endangered species*

Dr. Bob Anderson reported that changes in COSEWIC include a new structure in which the subcommittee chairs, independent scientists who previously voted directly on species status, will no longer have voting status. Only delegates (political appointees) will make the final decisions on species status. This change has caused great concern. Endangered species legislation is expected to be reintroduced to Parliament soon and members of the Committee noted that it would be better to have no legislation than poor legislation, because passing any Endangered Species Act would lead the public to think that the problem has been solved.

5. *Funding for biodiversity projects*

Dr. Terry Wheeler had compiled a list of sources of funding for biodiversity and systematics projects. The best way to disseminate this information would be by posting it on the web. The idea of a workshop at an ESC meeting on funding sources and applications would also be suggested.

6. *Error rates in identifications*

Dr. Marshall had tried to find a way to quantify the recognized problem of the high error rates of identifications especially among non-specialists, but without success because of statistical difficulties. An anecdotal article will be prepared for the Survey newsletter to expose some of these issues.

7. *Geographic data*

Mr. Antony Downes pointed out that making summary records of distribution by province is outdated. Given the work already being carried out by the Ecological Monitoring and Assessment Network, however, the Committee decided to await EMAN initiatives regarding ecozones before considering zones from an entomological point of view. Dr. Wheeler suggested that the key issue might be the need to adopt data standards on labels, and would consider the matter further.

8. *Scientific representation on international biodiversity forums*

The Committee heard concerns that Canada sends a group of low-profile civil service bureaucrats to biodiversity discussions whereas the U.S. and Europe tend to send scientific experts. Possible ways to improve this state of affairs were discussed.

9. *Dissemination of biodiversity information*

A brief to show how valuable results are being generated by properly conceived work on biodiversity, following the prescriptions made in earlier briefs by the Survey, is being drafted. The Survey will also address what sort of products, including those that give more detailed information in the area of biodiversity, should be put on the Survey's web site. A subcommittee chaired by Dr. Anderson agreed to look at this issue. Dr. John Huber and Dr. Anderson reported for the Survey's project on faunal analysis and

gaps in expertise that commitments have been received from a number of people to work on specific groups. Aspects of posting the information on the web will be investigated in the context of the wider web site issue.

10. Monitoring of continuing priorities for work on Canadian faunas

Recent developments related to earlier or currently less active survey projects were considered, especially information about continuing studies of the Yukon fauna.

Liaison and exchange of information

1. Canadian Museum of Nature

Ms. Joanne DiCosimo, President, Canadian Museum of Nature, reviewed some initiatives stemming from the national consultation process that the Museum had undertaken last year. A number of initiatives fall under the objective of increasing national service. In response to the country-wide opinion that Canadians want to see their national natural science collections, an exhibit is being developed under the working title "Just another millennium".

Dr. Mark Graham, Director, Research Services, Canadian Museum of Nature, reported that a partnership program through NSERC to support graduate students studying systematic research is now in place. He reviewed some initiatives pertaining to visiting fellowships, biodiversity, Museums and database work. The Standing Committee of Environment and Sustainable Development, chaired by the Honourable Charles Caccia, has convened a hearing on issues pertaining to systematics research in Canada and bioinformatics, and several agencies will make presentations. This forum may heighten the awareness of systematics research and might lead to some formalization of the activities of the Federal Biosystematics Partnership. Ms. DiCosimo added that the CMN is able to bring relevant results from its national consultation.

2. Biological Resources Program, ECORC

Dr. Jim McKenzie, Program Manager, ECORC, reported that as of July 1 ECORC has a new Director - Dr. Jean-Marc Deschênes. Dr. McKenzie reported that ECORC will work towards a partnership with the Integrated Taxonomic Information System (ITIS), to support the development of a credible authoritative North American source of information. ECORC hosted a Canadian Biodiversity Information Initiative (CANBII) meeting and plans were developed for the first module of a collaborative long-term on-line project on the biota of Canada. The prototype module will be the butterflies of Canada. CANBII intends to deal with the biota of Canada, metadata standards and the integration of biodiversity information into Geographic Information System frameworks.

3. Entomological Society of Canada

Dr. Danks, President of the Entomological Society of Canada, reported on the ESC Gold Medal award. He reminded the Committee about the significant changes the Society was implementing as a result of decisions following the Strategic Review. All of the main elements of the Society's restructuring were completed during the year, and the Society is now well placed to continue for the future.

4. Canadian Forest Service

Dr. Huber, Canadian Forest Service, reported that within the next 5 years there will be a 40% turnover of CFS staff, largely due to retirements. He hopes that some of the replacements in the next five years will be taxonomists, for example research positions in the regional laboratories.

5. Parks Canada

Mr. Don Rivard, Ecosystem Management Manager, Parks Canada, presented the State of the Parks 1997 Report; the chapter on National Parks addresses the maintenance of the ecological integrity of National Parks. The majority of species recorded this century are still in the Parks, but there are changes. For example, extirpated species are especially large birds and mammals that were hunted. Parks should not be studied as islands but rather in terms of land use: for example road density inside and outside the Parks is closely correlated. In response to questions, Mr. Rivard pointed out that Parks Canada is very decentralized, which hinders the coordination of information. There is a policy commitment to inventory the species in Canada's national parks but this does not necessarily translate into funding, given that Parks has been downsized considerably.

6. Ecological Monitoring and Assessment Network

Dr. Patricia Roberts-Pichette, Executive Secretary, Canada/MAB commented that the new Director of EMAN, Dr. Hague Vaughan, has been discussing aspects of biological diversity with various depart-

ments in the hope that there will be better information flow and a more coordinated federal effort. Dr. Finnermore resigned as chair of the Biodiversity Science Board but Dr. Scudder agreed to serve out the remaining term.

Dr. Ian Smith explained that the Ecological Monitoring Coordinating Office (EMCO) would like a group of interested biologists to come up with recommendations on what should be measured at EMAN sites, to encourage consistent assessment of biodiversity across the country. After discussion, the Committee agreed to explore the possibility of the Survey's involvement. A workshop was arranged for February 1999. Dr. Roberts-Pichette provided other information about museum collections, ecozone assessments, and the EMAN national meeting.

7. Parasitology module, Canadian Society of Zoologists

Dr. David Marcogliese, Parasitology module, Canadian Society of Zoologists, reminded the Committee that the major activity of the parasitology module has been to develop EMAN protocols for monitoring parasites. The protocols are being posted on the web. Protocols for parasites of other groups are in progress. The Directory of Parasitologists is on the web and changes can be submitted electronically. Additional projects are proceeding. Dr. Marcogliese reviewed other projects and involvements of Canadian parasitologists as well as meetings, publications and other topics of interest.

Other items

1. Regional developments

Information from different regions of Canada was provided. For example, in British Columbia, the gypsy moth problem continues. The Entomological Society of British Columbia is alive and well with a good contingent of students and is in a sound financial position. Several projects, for example in the Kootenays and South Okanagan, were reviewed.

In Alberta, the Provincial Museum of Alberta is undergoing some changes. Database development and digital information management are priorities for the museum. As part of expansion considerable additions to the invertebrate program have been proposed. The substantial building expansion for the Lethbridge research centre continues and is scheduled to be completed in 2001. Dr. Finnermore reported that the "grasslands" project in Peru had collapsed suddenly; the fate of the 14 million specimens already collected is being negotiated.

In Ontario, a new entomologist has been hired in the Department of Environmental Sciences. Naturalists guides, including several entomological guides, are being produced by a small publisher from Guelph. Plans have been submitted to retrofit the Neatby Building in Ottawa. The Canadian Museum of Nature is implementing a new database system for the collection.

In Quebec, some insect surveys are being made in forests affected by the January 1998 ice storm. The Redpath Museum at McGill University received a grant to develop a virtual exhibit on Quebec biodiversity, including arthropods. McGill has recently taken possession of a large donation of land on Île Perrot and it is hoped that arthropod survey work will be done there next summer. A proposal to upgrade McGill University's field stations has passed the first screening phase. Many graduate students in systematics and diversity projects are working or will soon begin at Macdonald College.

In Newfoundland, the Newfoundland Insectarium in Deer Lake is now open.

For the Arctic, Dr. Ring commented on a recent newspaper item pointing out that in Canada only about 20 cents per capita is spent on polar research whereas Australia and the U.S. spend much more per capita; even Russia spends more than Canada. The concept of a university of the arctic is being discussed. This would be a circumpolar university without a central campus but with campuses throughout the north.

2. Other matters

The Committee discussed operations of the Biological Survey Secretariat, Survey publicity, damaged ecosystems, membership of the Committee (several members retired by rotation), and other matters.

H.V. Danks
Ottawa, Ontario

International Commission on Zoological Nomenclature

Opinions published in the Bulletin of Zoological Nomenclature

The following Opinions were published on 18 December 1998 in Vol. 55, Part 4 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. (e-mail: iczn@nhm.ac.uk).

OPINION 1910. *Roeslerstammia* Zeller, 1839 and *Acrolepiopsis* Gaedike, 1970 (Insecta, Lepidoptera): conserved by the designation of *Alucita erxlebella* Fabricius, 1787 as the type species of *Roeslerstammia*; and *A. erxlebella* and *Tinea imella* Hubner, [1813] (currently *Roeslerstammia erxlebella* and *Monopis imella*): specific names conserved by the designation of a neotype for *A. erxlebella*.

OPINION 1911. *Dasneura* Rondani, 1840 (Insecta, Diptera): *Tipula sisymbrii* Schrank, 1803 designated as the type species.

OPINION 1912. *Pseudofoenus* Kieffer, 1902 (Insecta, Hymenoptera): *Foenus unguiculatus* Westwood, 1841 designated as the type species.

PERSONALIA

OBITUARIES

Every year we see an ever-lengthening list of deceased members of the entomological community in the minutes of the Annual General Meeting. Many of these people are unknown or little more than names to current members of the Society. Yet all of them are people who have helped build the base on which present-day entomology stands. I see two in this year's list about whom I know enough to feel confident I can help us remember them.

With the Newsletter for Senior Entomologists and Associates, compiled by Ed Becker and supportive of and supported by Canacoll, Ed is usually aware of these deaths first. He tries to find somebody to write an obituary, usually without success. I and the other members of the Heritage Committee urge you to not wait. Write something for the Bulletin, even if it is brief. We owe it to these people to remember them in this way. The retirements of many were not written up either, and were too easily forgotten in retirement.

Charles C. Smith 1907 -1998

Charlie Smith was one of those old-timers who go all the way back to the 30s; he started with the Dominion Entomological Laboratory at Fredericton in 1931. That was when the European Spruce sawfly was the scourge of the eastern boreal forest and soon to become the first big biological-control success story in Canada. Charlie was a technician involved in many things in his career. When I started at Fredericton was concerned with the control of shade tree pests. Many of those almost 200-year-old white elm trees in Fredericton wore dark sashes for many years from the Tanglefoot bands Charlie put on them to prevent the wingless females of the fall cankerworm from climbing the trunks. I haven't looked lately, but of those still standing, I'll bet most still wear sashes.

Then there were aphids in the elms. Ellen MacGillivray would know their name. The people who parked downtown hated them because their cars would be covered with black mouldy honeydew. Charlie was involved with that problem, but it proved to be cyclical and went away at the end of the season and didn't come back the next year.

Charlie was heavily involved with the control of Dutch elm disease, and initially under supervision of Dr. Reg Balch, the sanitation program that became a model for other North American cities was begun. Both Charlie and Reg served on the Fredericton Tree Commission from its beginning, and it continues to this day with the participation of their successors.

There are some delightful old photographs in the files at CFS, Fredericton, that show a high pressure sprayer that Charlie used on the streets of Fredericton and Liverpool, NS, that could throw a spray over 35 metres into the crowns of those great elms. Try that today, even with pure water. You'd be besieged with angry people.

Charlie wrote papers too, some on control and some on bionomics. I am proud to have shared authorship with him on some. He raised shade trees for sale, things like linden and Norway maple, most of which he sold to the city. When I saw Charlie about 4 years ago he was still raising nursery stock and gave me a number of Amur maples. He gave me for the lab archival collection a brass plaque that had been on the lab building until about 1942 that he had squirreled away in his basement. He was worried then if he would pass an obligatory drivers' test. He did.

He didn't look much older in 1998 than he did when I first met him in 1956. The next time I saw him, in the hospital in October, was the last. Charlie died later that month, aged 91.

Doris Maxwell

Dorie, as she was known by her friends, was the wife of the late Charles W. B. Maxwell, who died in 1988. Charlie owed a great deal of his success as a pioneer in fruit entomology to the support of Dorie who died in 1998. His obituary is in Bulletin ESC 21:51.

Doug Eidt Chairman
Heritage Committee

PUBLICATIONS

Book Reviews

Choe, Jae C. & Bernard J. Crespi. 1997. *The Evolution of Social Behavior in Insects and Arachnids*. Cambridge University Press, New York, NY. 541 pp. \$65.50 soft cover.

Only a few years ago, discussions about insect sociality involved mostly students of the hymenoptera and isoptera and there was general agreement that a small number of factors had predisposed certain taxa to evolve away from selfish life histories towards altruistic behaviour. Namely, hymenopteran species were predisposed to the evolution of eusociality because of haplodiploidy and termites travelled down the same path because of the vital need to pass gut symbionts from generation to generation. In this volume, Choe and Crespi have brought together papers that examine social behaviour not only in these 'traditional' groups but also in taxa that are not generally considered to show social behaviours. In fact, of the 24 chapters in this book, only eight deal with bees, ants, wasps, or termites while the rest consider cockroaches, thrips, true bugs, aphids, beetles, lepidoptera, spiders, and mites. One chapter compares cooperative breeding in wasps and vertebrates.

The *Evolution of Social Behavior in Insects and Arachnids* is one of two volumes released concurrently by the same two editors, the second is the *Evolution of Mating Systems in Insects and Arachnids*. The editors state that they were motivated to produce 'Social Behavior' for three reasons. First, there was a need to include an increasing list of taxa into the eusocial club. Second, the development of new comparative approaches that provide statistical tests for association among characters, and between characters and the environment, has provided the ability to combine the phylogenetic history of eusociality with micorevolutionary analysis based on optimality, functional design, and measurement of selection. Third, the need to reevaluate the terminology of sociality to fit the ever-expanding list of species. This latter revision of the terminology is not a simple loosening of terms, so as to allow more species into the "eusocial club", rather, it is a recognition that categories or levels of sociality that were created for hymenopteran species may not always be more broadly applicable.

Relying on the underlying concepts of inclusive fitness and optimality theory as unifiers, the chapters come together to expand not only the list of species that we might consider to be social, but also the ecological factors that may favour the evolution of sociality, for example, the utilization of ephemeral

resources that favour aggregations of individuals, breeding in tunnel systems, or the need to defend rare nest sites, eg., hollow thorns or galls. In one sense, by studying the importance of such factors in taxa where social behaviours are less common, they can be examined without the confounding effects of haplodiploidy and without having to guess backwards at the origins of an already eusocial group.

This book is likely to be of interest to all students of insect social behaviour and is likely to stimulate and enliven the exploration of the causes behind the evolution of social behaviours. It is well laid-out and has good synthesizing introductory and concluding chapters by the editors. The rest of the chapters take the form of reviews of specific areas, as opposed to descriptions of single experiments, and are written by authors active in the appropriate topics. Each includes suggestions for further research. Although this book will be fun reading for behavioural ecologists, the chapters are richly laden with the jargon of behavioural ecology and may present some labour for the intrigued reader from outside the field.

In conclusion, this is a valuable book that brings together ideas from the broadening front of research into the evolution of sociality. Perhaps important and broadly-applicable additions to theory may one day come from observations or tests on a relatively obscure species that does not build massive nests, destroy buildings, or sting humans.

Ken Naumann
Vancouver, B.C.

Kuznetsov, V.N. *"Lady Beetles of the Russian Far East"* (xii + 248 pp., 59 figs.).

The substantial literature relating to the family Coccinellidae has a new and well-deserved addition in this book. It is a book that appears to have been developed by years of experience, by an appreciation of appropriate literature and by a clear recognition of what is needed by field workers and by interested amateurs.

"Lady Beetles of the Russian Far East" covers the north-west Pacific area from Sakhalin Island in the south to the Bering Straight in the north and includes the regions of Khabarovsk, Amur, Magadan and Kamchatka. These areas are of interest to North American workers because they are where the pan-arctic species occur and where natural exchange between the two continents is possible. A map would have been useful.

The book is divided into seven sections or chapters of which the first five are each short but adequately cover various general aspects of the subject. Chapter I - Historical Review is essentially a literature review set in an historical context; Chapters II and III cover Methodology and Anatomy; Chapters IV and V relate to the general biology and ecology of various species with some of the information being summarized conveniently in tables; Chapter VI reviews some of the efforts attempted in these and other areas to use coccinellids as control agents; Chapter VII- Taxonomy contains workable keys, descriptions and biological notes on each of the 91 species native to the area. Unfortunately larval keys have not been included but, where available, references to larval descriptions are given. Finally there is an extensive bibliography of over 400 titles, largely Russian but also including some North American and other literature.

By the author's own admission this is in many ways a derivative book. The taxonomy follows the work of Sasaji and others. There are no descriptions of new species. Sasaji's work has been relied upon extensively for the anatomy and for related drawings. But much of the biological information is from original work done at various laboratories scattered throughout the work area. It is this that makes the book more useful than many annotated lists. In the discussion of the ecology, seasonal occurrences of the different stages are reported. Where possible the food of the different species is discussed carefully and this information, together with that given in Gordon (1985) for North American species, presents a rather extensive picture of the feeding habits of holarctic Coccinellidae. Another interesting facet of the biology, reminiscent of Majerus' book (1994), is the recording of where the beetles are most likely to be found, regardless of their food relationships.

The book is well-illustrated with black and white line drawings of the adults and, in some cases, of details of their anatomy. Also, where the author felt it useful, illustrations of the male genitalia are given;

female genital characters are only briefly treated and are rarely illustrated. The illustration depicting the dorsal setation of various species of *Scymnus* might have been somewhat larger. Typographical errors are few and far between. Although some readers will perhaps consider the bright, bold cover as money better spent on some coloured illustrations inside, it is a nice change from the dull covers that so frequently hide this kind of publication.

Supported by the National Biological Control Institute (USDA/APHIS), guided editorially by Dr. N. Vandenberg (USNM) and published by the Centre for Systematic Entomology as Memoir No. 1 "Lady Beetles of the Russian Far East" is the kind of regional treatment that should be emulated elsewhere. It should be within reach of all those working with coccinellids in a practical way. The book is available from the Centre for Systematic Entomology, c/o DPI, P.O. Box 147100, Gainesville, Fla. 32614-7100; \$58.00 US.

References

Gordon, R. 1985 The Coccinellidae (Coleoptera) of America north of Mexico. J. N.Y. Ent. Soc. 93: 1-912
Majerus, M.E.N. 1994 Ladybirds. pp. 366. Harper-Collins Publ. London.

Wynn Watson
Cambridge

Hallman, G.J. and D.L. Denlinger (eds.) 1998. *Temperature Sensitivity in Insects and Application in Integrated Pest Management*. Westview Press. Boulder, Colorado, USA; Oxford, U.K. 311 pp. ISBN 08133 8990 9 (HB) Price: 53.95 UK pounds.

The editors of this collection of individual essays state that it "concentrates on ...IPM tools that exploit extreme temperatures." This choice led to the consideration, primarily, of pests in situations in which temperature can be manipulated, and on IPM tools which can be used in conjunction with extreme temperatures. The Chapter titles are generally descriptive of their contents: 1. Introduction: Temperature Sensitivity and Integrated Pest Management. G.J. Hallman and D.L. Denlinger. 2. Physiology of Heat Sensitivity. D.L. Denlinger and G.D. Yocum. 3. Physiology of Cold Sensitivity. D.L. Denlinger and R.E. Lee Jr. 4. Reducing Cold-hardiness of Insect Pests Using Ice-Nucleating Active Microbes. R.E. Lee Jr., J.P. Costanzo, and M.R. Lee. 5. Temperature Synergism in Integrated Pest Management. D.J. Horn. 6. Stored Product Integrated Pest Management with Extreme Temperatures. L.J. Mason and C.A. Strait. 7. Use of Extreme Temperatures in Urban Insect Pest Management. M.K. Rust and D.A. Reiersen. 8. Temperature Treatments for Quarantine Security: New Approaches for Fresh Commodities. R.L. Mangan and G.J. Hallman. 9. Cold Storage of Insects for Integrated Pest Management. R.A. Leopold. 10. Insect Control in the Field Using Temperature Extremes. C.W. Hoy. 11. Temperature in the Management of Insect and Mite Pests in Greenhouses. R.K. Lindquist.

Following the Introduction, the chapters on the physiology of heat and cold-sensitivity set the stage for most of the remaining chapters, which examine the application of extreme temperatures in IPM. The review of the amount of mortality caused by high temperatures in relation to time of exposure (Chapter 2) is good, but in describing the "Causes of Heat Injury", the authors, faced by a paucity of insect examples, use results from a wide range (yeast to mammals) of other taxa without discussing the likelihood that similar processes would occur in insects. However, the section on heat shock proteins presents excellent evidence on the occurrence of similar mechanisms in a wide variety of organisms Chapter. 3, on cold sensitivity, emphasizes freezing, but includes some discussion of non-freezing injury. The causes of non-freezing injury in insects are not well-studied, but the authors present relevant results from other organisms.

Chapter 5, on temperature synergism, covers the ways in which temperature can affect the efficacy of chemical and microbial pesticides, host-plant resistance, and pheromones. The overview of the relatively recent approach of using ice-nucleating, active microbes (Chap.4) to raise the supercooling point of insects concludes that a wide variety of insects can be affected by these organisms. However, its usefulness in IPM is restricted by the necessity for suitably low temperatures and the ability to deliver the ice-nucleating organisms to the pest. The currently active field of research on this method for stored product

pests is passed over because recent reviews are available. The rest of this chapter examines current research on applying the technique to reduce the survival of overwintering Colorado potato beetle adults in the field.

The Colorado potato beetle is also the main focus for Chapter 10, on the use of extreme temperatures for insect control in the field. The rather unusual circumstances under which temperatures can be manipulated in the field are reviewed, and the use of crop residue burning and flames to produce high temperatures is regarded as promising for some situations. Experiments on ways to improve the efficacy of direct flaming against the Colorado potato beetle are described.

Insect pests that occur in situations where temperatures can be manipulated (Chaps. 6,7,8,11) offer better opportunities for the use of extreme temperatures. These chapters present current practices and some suggestions for improved usage. The well-written chapter on stored-product pests covers the strengths and weaknesses of current techniques for using chilling to increase mortality and slow insect development (mixing, aeration) or high temperatures for short periods (fluidized or sprouted beds, dielectric heating, microwaves). There is also an interesting discussion on the possibilities of combining these approaches with the use of controlled atmospheres.

Glasshouse environments (Chap.11) have traditionally been manipulated for pest control and the use of steam or solar heat prior to planting to produce lethal high temperatures is reviewed. Combinations of temperature manipulation to alter pest development and to increase the efficacy of pesticides are covered and the use of temperature manipulation and controlled atmospheres to disinfect greenhouse products is promising. (see also Chap.8).

Pests falling under quarantine regulations present particular problems for IPM (Chap. 8). Extermination of insects subject to phytosanitary regulations is necessary, but many of the commodities (e.g. living plants) cannot tolerate extreme temperatures. This review covers practices, problems, and potential of the use of extreme temperatures, with particular emphasis on combinations of approaches and the effects of pre- and post-treatment conditioning.

The treatment of urban pests (Chap. 7) is confined to pests of household items, museum drawers and specimens, and wood-destroying insects. Both high and low temperatures may be suitable for treating small items. For wood-destroyers, lethally high temperatures are possible in hot climates, and liquid nitrogen can also be effective. Some of the problems in the development of good delivery techniques are examined.

The review of temperature-related techniques to improve the survival of mass-produced biological control agents (Chap. 9) includes much useful information but seems misplaced in a book that "concentrates on extreme temperatures". There are very few errors, and at least one of them suggests too great a reliance on "spell-check". The misleading statement "In many Hymenoptera, fertilization is controlled by the female, and eggs that are not fertilized develop into females." (p.61), probably should read "Among Hymenoptera with thelytokus parthenogenesis, the female controls the production of female (diploid) or male (haploid) eggs." The Index seems adequate, particularly for species, but the absence of an entry for "non-freezing (low temperature) injury", p 66, makes one suspect that topics are less well covered. In general, this book will provide the reader with much useful information on the current status, and on some potential approaches, in the use of extreme temperatures in IPM. Many of the chapters focus on results from USA, which could be particularly interesting to readers in other geographic areas.

W.J. Turnock
Cereal Research Centre
Winnipeg, Canada.

Gibson, G.A.P., J.T. Huber, and J.B. Wooley (Eds.) 1997. *Annotated keys to the genera of nearctic Chalcidoidea (Hymenoptera)*. National Research Council Press, National Research Council of Canada, Ottawa, Ontario, Canada. xi + 794 pp. Hardcover, \$(Cdn) 64.95.

This ambitious book is a compilation of the efforts of seventeen authors from four countries. This kind of cooperative effort is necessitated by the scope of the book; all of the genera of the entire superfamily Chalcidoidea known to occur in North America are treated, 706 genera in 19 families in total. For many of these families this is the first time that generic keys are available that treat Nearctic fauna.

The book begins with three introductory chapters: Introduction, which deals primarily with the history of chalcid taxonomy, Morphology and Terminology, which is a thoroughly-illustrated discussion of characters used in keys, and Superfamily Chalcidoidea, which gives an overview of biology and taxonomy and includes a picture key to families. This key, with each couplet richly illustrated so that structures and often variation can be viewed as the couplet is read, is easily the best chalcid key I have used. The next nineteen chapters deal with individual families. Each chapter follows a basic format: An introduction to the family, a key to genera, an index of higher taxa, a list of references, and illustrations for the key. The book concludes with an appendix of generic names no longer considered valid, an index of plant host names, an index of animal host names, and finally an index to taxa. There is no index to illustrations, but according to the Abstract there are over 1800, both S.E.M. photographs and hand drawings. The quality of both is excellent.

The family treatments are the real heart of the work. Each family has been treated separately by an expert author, or in the case of larger families, several co-authors. As one might expect, there is quite a bit of variability among treatments. Not only do authors have their own styles of presentation and generic concepts, but the nature of the families treated dictate the quality and usefulness of their chapters. For example, after running numerous specimens through the keys, I found that I continued to have occasional difficulty using the keys to the Encyrtidae and Eulophidae, and more difficulty with the key to Pteromalidae. Without more experience it is hard to know how much of this was due to the keys themselves and how much to the difficult nature of the taxa or generic concepts. There is no doubt that it was in part due to the number of genera keyed (173, 110, and 224 respectively), and therefore key couplets required (361, 134, and 311 respectively). These three keys are particularly unwieldy, and while using them I frequently wished that a key breaking these groups into smaller units, such as subfamilies, was available. In general, use of generic keys was not nearly so handy as use of the family key. Of course, rendering the generic keys as picture keys would have lengthened the work to the point of requiring publication in series.

One of the stated purposes of the book is to make a diagnostic tool available to chalcidoid specialists and non-specialists alike. I warn any non-taxonomist in advance that considerable time, patience, and practise will be required before real confidence in identification will be achieved. Genera are numerous, structures frequently minute, and the state of specimen preservation rarely as good as the examples figured. Given a reasonable amount of effort, however, and a bit of refinement of curation technique, systematists, students, biological control workers, or anyone needing accurate identification of Chalcidoidea will come to find this book invaluable. As to the other major purpose, to stimulate research in chalcidoid systematics by providing a sound taxonomic base; mission accomplished.

At most this book should be considered a significant step (a large leap, really) forward in chalcidoid taxonomy for North America; at least it must be considered vastly superior to the alternative, which for most of us is nothing. The Superfamily Chalcidoidea is a diverse, divergent, taxonomically difficult group of insects whose systematics in North America has suffered from the lack of a 'great synthesis', a 'benchmark work'. Well, that work has been provided.

Daryl J. Williams
Edmonton, Alberta

A New Journal of Entomology

The Gazi Entomological Research Society in Turkey is pleased to announce the commencement of the *Journal of the Entomological Research Society*. Volume 1, Part 1 has just been published and the journal will be published in a single volume three times per year. This journal welcomes original manuscripts with an emphasis on morphology, taxonomy, systematics, nomenclature and bibliographies, as well as on faunistic and distributional studies of insects.

Contact: P. Box 110, Bahcelievler P. Isl. Mud. - 06502 - Ankara, Turkey
E-mail: entomol@quark.fef.gazi.edu.tr URL: <http://www.fef.gazi.edu.tr/~entomol>

SCHOLARSHIPS AND GRANTS

Entomological Society of Canada Postgraduate Awards 1999

The Entomological Society of Canada will offer two postgraduate awards of \$2,000 each to assist students beginning graduate study and research leading to an advanced degree in entomology. The postgraduate awards will be made on the basis of high scholastic achievement.

Invitation for Applications

Eligibility: Applicants for either scholarship must be members of the Entomological Society of Canada. The successful applicants must be either Canadian citizens or landed immigrants with Bachelor's degrees from Canadian universities. Applicants must begin their first year of postgraduate studies between **15 June 1997 and 31 December 1999**. The studies and research must be carried out at a Canadian university. Each award is conditional upon certification by the Department Head that successful applicants have been accepted into the first year of a program of study and research for an advanced degree with full graduate status. A student who was unable to gain admission or enters graduate school as a qualifying candidate is not eligible to receive an award.

Method of Application -Applicants must submit a properly completed form, with support documents. Application forms are available at <http://www.biology.ualberta.ca/esc.hp/form.htm>, or from the Chair of the ESC Student Awards Committee. The original and 3 copies of the application must be submitted to the Chair of the Student Awards Committee postmarked no later than 12 June 1997. Please specify if you are applying for the Postgraduate Award, the Keith Kevan Scholarship, or both.

Process of Selection and Award Presentation -Applications will be reviewed by a committee of the Society. An announcement of the two winners will be made at the annual meeting of the Society and each winner will receive a certificate. Payment of the award will be made in October 1999.

Regulations

Earnings from Other Sources -Award holders are permitted, under normal circumstances, to demonstrate, instruct or assist in non-degree related research for a maximum of 200 hours per annum, provided that the Head of their Department considers this is desirable and that it does not hinder the progress of their studies. Apart from these assistantships, award holders will devote their full time to study and research and will not undertake any paid work during the school term. They may hold other awards and scholarships.

Transfers -Awards are made on the condition that the winners engage in a program of graduate studies and research for an advanced degree in entomology in Canada. Students, who after receiving the award, wish to change their graduate program or transfer to a foreign university may be asked to decline the award. Any change in the course of study, department or university in which an award winner is registered requires prior approval of the Scholarship Committee. A request for permissions to transfer must be supported by statements from Heads of Departments.

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

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

Dr. B. Staffan Lindgren, Chair
ESC Student Awards Committee
College of Science and Management
University of Northern British Columbia
3333 University Way
Prince George, BC V2N 4Z9
E-mail: lindgren@unbc.ca

La Société D'Entomologie du Canada Bourse Pour Étudiants Post-Gradués 1991

La Société d'entomologie du Canada offrira deux bourses d'une valeur de \$2,000 chacune pour aider des étudiants qui débutent des études post-graduées et des recherches en vue de l'obtention d'un diplôme d'études supérieures en entomologie. Les bourses seront accordées aux étudiants ou étudiantes en raison des seuls critères de réussite académique.

Avis

Éligibilité: Les candidats pour chacune des bourses doivent être membres de la Société d'entomologie du Canada. Les candidats doivent aussi être Canadiens ou résidents reconnus du Canada et détenir un baccalauréat d'une université canadienne. Les candidats doivent obligatoirement avoir débuté leur première année d'études post-graduées entre le 15 juin 1997 et le 31 décembre 1999, et effectuer leur étude et recherche dans une université canadienne. Les bourses ne seront accordées que lorsque les directeurs de Département auront certifié que les candidats choisis sont inscrits en première année d'un programme d'études supérieures, et ce avec tous les privilèges attachés au statut d'étudiant gradué. Un étudiant qui n'a pu être admis à l'École des Gradués, ou qui s'inscrit en vue de compléter l'obtention de crédits, n'est pas éligible à la bourse.

Procédure: Les candidats devront soumettre leur candidature à l'aide du formulaire approprié et y joindre tous les documents requis. Les formulaires sont disponibles auprès du président du Comité des bourses aux étudiants de la Société ou sur notre site internet à l'adresse suivante: <http://www.biology.ualberta.ca/esc.hp/form.htm>. Le formulaire original, ainsi que trois copies, devront être envoyés au président du Comité des bourses aux étudiants de la Société et reçus au plus tard le 12 juin 1999. Veuillez préciser si vous désirez les formulaires pour la Bourse Post-graduée ou la Bourse Keith Kevan.

Sélection et remise des bourses: L'analyse des candidatures se fait par un comité de la Société, et l'annonce des récipiendaires se fera à la réunion annuelle de la Société où ils recevront un certificat. Le paiement de la bourse aura lieu en octobre 1999.

Règlement

Autres sources de revenus: Un boursier pourra normalement donner des séances de cours ou de démonstration et être auxiliaire de recherche jusqu'à un maximum de 200 heures par année, en autant que le Directeur de son département considère cela profitable et que ces tâches additionnelles ne nuisent pas au progrès de l'étudiant. Mises à part ces exceptions, un boursier devra consacrer tout son temps à ses études et recherches et n'accepter aucune autre rémunération. Il peut cependant jouir d'une autre bourse ou d'un prix.

Transferts: Les bourses sont accordées à condition que les boursiers entreprennent des études graduées en vue de l'obtention d'un diplôme en entomologie au Canada. Les boursiers qui décideront de changer de champ d'études, ou de transférer dans une université hors du Canada peuvent se voir retirer leur bourse. Après acceptation de la bourse, tout changement de programme d'études, de département ou d'université devra recevoir au préalable l'approbation du Comité de la Bourse de la SEC. Une telle demande doit être accompagnée de documents provenant des Directeurs des départements concernés.

Frais supplémentaires: La somme offerte est invariable. En aucun cas la Société n'accordera de montant supplémentaire. Des frais additionnelles, par exemple, pour assister aux réunions scientifiques, payer des frais de cours, défrayer des coûts de publications, etc..., ne seront autorisés sous aucune considération. Toute correspondance relative aux bourses, incluant les demandes de formulaires doit être adressée à:

Dr. B. Staffan Lindgren, Chair
ESC Student Awards Committee
College of Science and Management
University of Northern British Columbia
3333 University Way
Prince George, BC V2N 4Z9
E-mail: lindgren@unbc.ca

1 Le masculin est employé dans ce texte pour désigner les personnes des deux sexes.

Entomological Society of Canada Keith Kevan Scholarship 1999

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

Invitation for Applications

Eligibility: Applicants for either scholarship must be members of the Entomological Society of Canada. The successful applicant must be a graduate student at the time of application, studying at a Canadian university or be a Canadian citizen studying abroad.

Method of Application -Applicants must submit a properly completed form, with support documents. Application forms are available at <http://www.biology.ualberta.ca/esc.hp/form.htm>, or from the Chair of the ESC Student Awards Committee. The original plus 3 copies of the application must be submitted to the Chair of the Student Awards Committee postmarked no later than 12 June 1999. Please specify if you are applying for the ESC Postgraduate Award, the Keith Kevan Scholarship, or both.

Process of Selection and Award Presentation -Applications will be reviewed by a committee of the Society. An announcement of the two winners will be made at the annual meeting of the Society and each winner will receive a certificate. Payment of the award will be made in October 1999.

Regulations

Earnings from Other Sources -Award holders are permitted, under normal circumstances, to demonstrate, instruct or assist in non-degree related research for a maximum of 200 hours per annum, provided that the Head of their Department considers this is desirable and that it does not hinder the progress of their studies. Apart from these assistantships, award holders will devote their full time to study and research and will not undertake any paid work during the school term. They may hold other awards and scholarships.

Transfers -Awards are made on the condition that the winners engage in a program of graduate studies and research for an advanced degree in entomology. Any change in the course of study, department or university in which an award winner is registered requires prior approval of the Scholarship Committee. A request for permissions to transfer must be supported by statements from Heads of Departments.

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

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

Dr. B. Staffan Lindgren, Chair
ESC Student Awards Committee
College of Science and Management
University of Northern British Columbia
3333 University Way
Prince George, BC V2N 4Z9
E-mail: lindgren@unbc.ca

La Société D'Entomologie du Canada Bourse Keith Kevan 1991

En mémoire du Dr. D. Keith McE. Kevan, la Société d'entomologie du Canada offrira une bourse de \$1,000 pour aider les étudiants gradués qui entreprennent des études en taxonomie des insectes. Cette bourse sera accordée selon des critères d'excellence académique et de la prééminence en taxonomie des insectes.

Avis

Éligibilité: Les candidats pour chacune des bourses doivent être membres de la Société d'entomologie du Canada. Ils doivent être des étudiants gradués inscrit dans une université canadienne ou des citoyens canadiens étudiant à l'étranger.

Procédure: Les candidats devront soumettre leur candidature à l'aide du formulaire approprié et y joindre tous les documents requis. Les formulaires sont disponibles auprès du président du Comité des bourses aux étudiants de la Société ou sur notre site internet à l'adresse suivante: <http://www.biology.ualberta.ca/esc.hp/form.htm>. Le formulaire original, ainsi que trois copies, devront être envoyés au président du comité des bourses aux étudiants de la Société et reçus au plus tard le 12 juin 1999. Veuillez préciser si vous désirez les formulaires pour la Bourse Post-graduée ou la Bourse Keith Kevan.

Sélection et remise des bourses: L'analyse des candidatures se fera par un comité de la Société, et l'annonce des récipiendaires se fera à la réunion annuelle de la Société où les deux gagnants recevront un certificat. Le paiement de la bourse aura lieu en octobre 1999.

Règlement

Autres sources de revenus: Un boursier pourra normalement donner des séances de cours ou de démonstration et être auxiliaire de recherche jusqu'à un maximum de 200 heures par année, en autant que le Directeur de son département considère cela profitable et que ces tâches additionnelles ne nuisent pas au progrès de son projet de recherche. Mises à part ces exceptions, un boursier devra consacrer tout son temps à ses études et recherches et n'accepter aucune autre rémunération. Il peut cependant jouir d'une autre bourse ou d'un prix.

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E-mail: lindgren@unbc.ca

1 Le masculin est employé dans ce texte pour désigner les personnes des deux sexes.

MEETINGS

MacMillan Coastal Biodiversity Workshop

including a component on biodiversity of rainforest arthropods

A special series of workshops focusing on biodiversity in coastal zones of British Columbia and Canada will be held on May 16 - 28, 1999 at the Bamfield Marine Station.

These workshops, for which enrolment for the individual parts is possible, are offered to senior undergraduate students, graduate students, faculty and government employees interested in a unique hands-on experience in coastal biodiversity research and surveys.†

Plenary Session

The first day of the program (May 16) includes a series of seminars by four leading scientists working in the field of biodiversity, Dr. Geoffrey Scudder, Centre for Biodiversity Research, UBC, Dr. Gerhard Pohle, Huntsman Marine Science Centre and the Atlantic Reference Centre, Dr. Max Taylor, Centre for Biodiversity Research, UBC, and Dr. Andre Martel, Canadian Museum of Nature, Ottawa, and BMS. These seminars will put the four special activities of the workshop in the general context of biodiversity

issues in coastal Canada. A general discussion for all participants is scheduled.

Workshop Activities

Evaluating biodiversity of intertidal and subtidal invertebrates (May 17 - 19)

Dr. Gerhard Pohle, HMSC and ARC

Algal diversity and use of molecular techniques in algal biosystematics (May 19 - 21)

Dr. Gary Saunders, UNB; Dr. Louis Druhl, BMS and SFU

Arthropod diversity in the temperate rainforest (May 22 - 24)

Dr. Neville Winchester, UVic

Diversity of plants and vertebrates on small coastal islands (May 25 - 27)†

Dr. Martin Cody, UCLA

Concluding Activities

Wrap-up Discussion (May 27)

Guided hike in the West Coast Trail area, Pacific Rim National Park Reserve (May 28)

Conservation of Arthropod Biodiversity in Temperate Rainforests

The workshop section on Conservation of Arthropod Biodiversity in Temperate Rainforests, led by Dr. Neville Winchester, Biology Department, University of Victoria, with participation from guest speakers such as Dr. Richard Ring, provides a primer for participants to evaluate concepts of temperate forest arthropod biodiversity.

Lectures cover the evaluation of arthropod biodiversity concepts using examples from case studies. The focus will be on developing a project to establish a long-term baseline in terrestrial systems to assess differences (species and process) over time. Pertinent literature in relation to forests, insects and biodiversity studies will be reviewed as a basis for critical discussion. A set of presentations will also be devoted to canopy work from a provincial, national and international perspective. Fieldwork includes access to the high canopy, and participants will be introduced to access techniques, sample design and use of canopy trapping techniques. Laboratory work on selected arthropod groups will be used to train participants in identification, species taxonomy, trapping, and all aspects of specimen preparation, including an introduction to data management and diversity measures using BIOTA.

Application

Applications must include a statement of interest, university transcripts (undergraduate or graduate students only) and a short CV (no more than 4 pages).

Send application by mail or fax to the address below before March 31, 1999; there is an enrolment limit of 15 participants.

Fees: (partial enrolment for one or more workshop activities is possible)

Fees for the workshop, including room and board:

- Undergraduate and graduate students \$400 (\$100/activity)
- Postdoctoral fellows and faculty members \$600 (\$150/activity)
- Other public and private sector employees \$800 (\$200/activity)

Location

Bamfield Marine Station

Bamfield, British Columbia V0R 1B0, Canada

(250) 728-3301 (phone); (250) 728-3452 (fax)

mail to: info@bms.bc.ca, or www.bms.bc.ca

MISCELLANEOUS

Programs Wanted

The Heritage Committee is looking for reasonably clean copies of the programs for the 1994, 1995, 1997, and 1998 annual meetings. These will be deposited in the National Archives of Canada to bring their holdings up-to-date. Please contact me at before sending them, to avoid duplication. Thank you.

We are also pleased to receive other artifacts and documents that you may consider appropriate for preservation.

Doug Eidt, Chairman
Heritage Committee

The NABA-XERCES Fourth of July Butterfly Count, 1999

Hosted by the North American Butterfly Association, the 25th annual butterfly count will be held this summer. These counts are fun-filled, but also track the butterfly populations of North America. Volunteers select a count area with a 15-mile diameter and conduct a one-day census of all butterflies sighted within that circle. The counts are usually held a few weeks before or after the 4th of July. NABA organizes the counts and publishes annual reports, providing information on geographical distributions and population sizes of the species counted. No matter how much or how little butterfly watching you have done, the results can be surprising and interesting. For more information, please consult NABA's website at www.naba.org or send a self-addressed stamped envelope to: NABA, 4 Delaware Road, Morristown, NJ 07960, USA

ADVERTISEMENTS

New laboratory manual: Techniques in Insect Immunology

A new lab. manual: Techniques in Insect Immunology, ed. A. Wiesner, G.B. Dunphy, V.J. Marmaras, I. Morishima, M. Sugumaran, and M. Yamakawa. 300 pages with color illustrations, \$80 US +s/h

A comprehensive Laboratory manual by international experts in the field covering: encapsulation and phagocytosis, monoclonal antibodies and research tools, pattern recognition and microbial activation, intracellular regulation, antimicrobial and lytic factors, enzymes and radicals involved in defense reactions, immune regulation, genetic aspects and viral infection of midgut cells.

See: <http://www.netlabs.net/hp/sosjs>. SOS Publications, 43 DeNormandie Ave, Fair Haven, NJ 07704-3303

New Entomological Drawers

The technical features of this new box are that it allows perfect preservation of entomological pieces in any place and under any climate. With this drawer the need for periodic controls and maintenance is reduced to a minimum. For this reason we believe that the SEM drawer will soon become the new standard for entomological preservation. A description site of the drawer can be found at the following URL: <http://www.sem7.com>. email: fulqui@tin.it

Fulvio Quinto, S.E.M sas, Via Oleandri, 11
25010 San Felice del Benaco BS, ITALY

Toronto Entomologists' Association Books

The Toronto Entomologists' Association announces that it is NOW taking prepaid orders for reproductions of the following out-of-print books:

1. The Cicindelidae of Canada by J.B.Wallis (1961) (with colour plates) (In Canada-\$28 Can. (includes gst and S&H via surface post); In USA \$23 US (includes S&H via surface post; add \$3 US for airmail).
2. The North American Dragonflies of the Genus Somatochlora by E.M. Walker (1925) (In Canada-\$55 Can. (includes gst and S&H via surface post); In USA \$43 US (includes S&H via surface post; add \$3 US for airmail).
3. The North American Dragonflies of the Genus Aeshna by E.M. Walker (1912) (with colour plates) (In Canada-\$65 Can. (includes gst and S&H via surface post); In USA \$50 US (includes S&H via surface post; add \$3 US for airmail).
4. Copies are still available for the 3-volume set "The Odonata of Canada & Alaska by Walker & Corbet"; cost for 3-vol set: In Canada- \$196 Can. (includes gst and S&H via surface post); In USA \$145 US (includes S&H via surface post; add \$5 US for airmail).

Please send your order to T.E.A. c/o Alan Hanks, 34 Seaton Drive, Aurora, Ontario Canada L4G 2K1, (905) 727-6993; or e-mail inquiries to: nmg.vanderpoorten@sympatico.ca

**ENTOMOLOGICAL SOCIETY OF CANADA
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA**

393 Winston Ave., Ottawa, Ontario K2A 1Y8

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

Name and Address (please print):
Nom et Adresse (lettres moulées):

telephone (bus.) / téléphone (au travail):

Fax:

Electronic mail address / Adresse électronique:

Keywords describing interest (up to six):
Décrivez vos intérêts en utilisant jusqu'à
six mots clés.

Membership is a personal affiliation; publications are the personal property of the individual member. Membership is on a calendar year basis.

Cotisation est une affiliation personnelle; publications payées ici appartient à l'individu. La cotisation des membres s'applique à l'année civile.

MEMBERSHIP DUES / COTISATION

Regular member / Cotisation regulier with/avec...Cdn \$80.00 + \$5.60 GST (Can)\$.....
The Canadian Entomologist & Bulletin US\$74 (\$100 Cdn) (U.S.A. & Int'l)

Student member / Cotisation étudiant with/avec...Cdn \$20.00 + \$1.40 GST (Can)\$.....
The Bulletin US\$18 (\$25 Cdn) (U.S.A. & Int'l)

or with/ou avec The Canadian Entomologist & Bulletin...Cdn \$40.00 + \$2.80 GST (Can)\$.....
US\$36 (\$45 Cdn) (U.S.A. & Int'l)

(ask your professor to endorse this form/demande l'appui de votre professeur)

Endorsement/Signature du professeur

Enclose cheque or money order (or use Mastercard or VISA) payable to : Entomological Society of Canada

Inclure un chèque ou mandat (ou utilisez Mastercard ou VISA) payable à : Société d'Entomologie du Canada

If you need an official receipt, please check:

Si vous désirez un reçu officiel, indiquez, s'il vous plaît:

Please copy and distribute to interested non-members. Thankyou.

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