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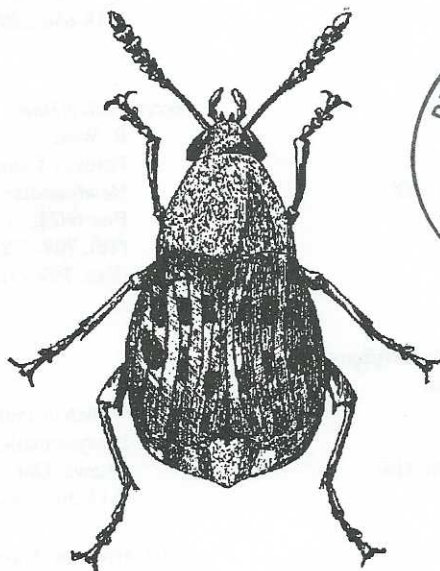
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# BULLETIN



ENTOMOLOGICAL SOCIETY OF CANADA  
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA

ENTOMOLOGICAL SOCIETY OF CANADA  
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA

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# EDITORIAL

## Pruning Periodicals

Finance Minister Michael Wilson has decided to cut \$775 million from Canada's post-secondary education system for 1992-1993. What will be the impact of these funding cuts?

I realize that all Universities - large and small - will be hard hit. But small Universities will undoubtedly feel the crunch most. At this University student fees are being hiked, departmental budgets cut, jobs frozen and library funds slashed. What will be the impact of the funding cuts on libraries? on subscriptions to journals?

In many libraries it is no longer possible to divert book funds to support soaring journal costs. De Gennaro (1977) suggested that librarians might challenge "the ethics and legality of differential subscription rates that allow publishers to charge libraries substantially more than individual subscribers". After looking briefly at my own entomological journal collection I see that, on average, Institutions have to pay 2.96 (+/- 1.90) times more for these journals (n=7) than I do. Our library only subscribes to 2 of these. It is little wonder, therefore, that we are not turning out more entomologists. (I admit, that we are a very small University!)

With increased funding cuts, many "Institutions of Higher Learning" will be forced to prune their periodicals. What can be expected? Stankus (1986) suggests that periodicals which were taken to serve the special interest of "those faculty members whose publishing activity has effectively ceased" be cancelled in favour of those periodicals serving faculty members whose publishing activity is seen to be continuing. The moral ... entomologists (especially systematists!) better start churning out LPU's (least publishable units).

Little-cited journals are also good candidates for cancellation (Broadus, 1985) ... so find a way to reference every obscure entomological journal in your library! Blake and Meadows (1984) report that "library staff often prefer to weed cheaper journals first, whereas academic staff prefer to cancel fewer, but more expensive, journals". What are your pruning preferences?

Blake, M. and Meadows, A.J. 1984. Journals at risk. *J. Librarianship*. 16(2): 118-128.

Broadus, R.N. 1985. On citations, uses, and informed guesswork: a response to Line. *College and Research Libraries*. 46(1):38-39.

De Gennaro, R. 1977. Escalating journal prices: time to fight back. *Am. Libr.* 8(2):69-74.

Stankus, T. 1986. Journal weeding in relation to declining faculty member publishing. *Science and Technology Libraries*. 6(3):45-53.

Fiona F. Hunter  
Brandon, Manitoba

The submission deadline for the September issue is **August 1st 1991**.

Send all submissions to: Fiona F. Hunter, *Bulletin* Editor, Zoology Department, Brandon University, Brandon, Manitoba, R7A 6A9. Tel. (204) 727-9623; Fax. (204) 726-4573; E-MAIL Address: BUFFH @ UOFMCC.

# LETTERS TO THE EDITOR

## Reply to Myers' "Where are the female entomologists?"

One of the stimulations of the *Bulletin* that I shall miss has been the inevitable Editorial from the former Editor, Dr. Aiken. Now there's been a little series of Editorials and replies on the subject of females in science, with special reference to entomology. No published comments in the *Bulletin* on this subject seem to have touched on what I think is the meat of the matter - **reproductive biology**. Face it, the female gender is subject to hormonal influences that men can barely guess at.

I know several female entomologists quite well - and have enjoyed sparring on the subject of differences between "ladies" and men. Women I know who are career entomologists, correct me if I'm wrong, have by-and-large forsaken certain aspects of family life such as posterity etc. (not that they regret it - there are certain compensations) that males generally have not had to forsake. For women to succeed, they need to make the same effort and time investment in career development and education that men do, and do so in the face of at least two opposing forces.

One relates to what Ron Aiken wrote about in his original Editorial to stimulate debate. The second is simply the basic biological difference twixt the genders, which people who write retorts to Ron aren't stating if they know it (surely they do?). Recognize the latter and many of the questions about why there are so few female entomologists are answered. Dr. Myers will find her answer to why only 10% of ESC membership is female by speaking to her female undergrads (grad students too) - ask them what sorts of issues they weigh in their deliberation about future careers. Few feel it would be easy to juggle the demands of child-bearing and family life with the unforgiving demands of an academic and research career.

Motherhood is not such an ignoble profession. None of us would be here in the absence of someone's committed parenthood. Why should females be sought after to balance the entomological and scientific employment equation when only a 10% proportion even chooses it (as evidenced by membership)? How many fewer than 1 female in 10 employed entomologists are there, or how many more can there actually be without making a deliberate recruitment effort? Surely, these days we embrace women in the profession of entomology if they choose it, as readily as men. I know of no entomologists who would deliberately overlook females, but it sure sounds like males are occasionally deliberately passed over!

I *know* I echo the opinions of moderate and sensible female entomologists that affirmative action has drawbacks. If females want to be entomologists, let them succeed based on their personal merits and commitments. No one wants to be a token female employee (never mind being identified as one in press!) nor would any males appreciate losing out in job competition by virtue of his gender alone. Let's not forget - the flip side of affirmative action, in favour of gender or francophone-ness (another can of worms - someone open that up for once, huh?), is that better qualified candidates *can* (not will) be passed over, and don't think they'd be too pleased.

Non-discriminatory hiring put me in my present position, and you can believe I appreciate it. Females and minorities are entitled to similar consideration as their ostensibly favoured counterparts,

but not to the exclusion of better qualified individuals. Is there anyone who seriously believes women are discriminated against in Canadian entomological circles these days? I'd like to think of myself as one of the "new generation of males that find females to be collegial ...". For that matter I know of none in the old generation of males that thinks otherwise. What's all the shouting about? Ron made a perfectly valid observation that a bunch of others went and stretched way out of proportion (which is only 10%).

Ingolf S. Askevold  
Florida A & M University  
Tallahassee, Florida

Dear Dr. Hunter,

I must unfortunately allow my membership in the ESC to lapse. Frankly, \$90 exceeds my budget, and being without grant support cannot maintain contact with my Society, the one I should and would like to support in the interest of returning to my home country as an entomologist one fine day.

How about proposing that a relatively nominal fee be instituted, say a \$10 annual subscription rate for the *Bulletin* alone, to expatriate Canadians who want and may need to keep in touch with their parent Society, for such things as gossip, job opportunities etc. I know I'm not the first to have terminated my membership on leaving the country, hopefully only temporarily, in favour of employment elsewhere.

Sincerely,  
Ingolf S. Askevold

Dear Fiona,

As a graduate student (and member of the Student Affairs Committee) I can understand the apparent reluctance of women to get involved. Short of the calls for nominations for the top positions, is there any procedure for "volunteering" to serve?, or this all done by appointment? I, for one, would like to see something spelled out in writing.

Sincerely,  
Kenna MacKenzie

# SOCIETY BUSINESS

## 41st Annual General Meeting (second notice)

**General Meeting:** The Annual General Meeting of the Entomological Society of Canada will be held at the Ramada Renaissance du Parc in Montréal, Québec from 1700 to 1800 h on October 22, 1991.

**Governing Board Meeting:** The annual meeting of the Governing Board will be held at the Ramada Renaissance du Parc in Montreal, Quebec on October 19 and 20, 1991.

Matters for consideration for either meeting should be sent to the Secretary, Dr. R.J. West.

### 41 Réunion Générale Annuelle

**La Réunion Générale Annuelle:** La Réunion Générale Annuelle de la Société d'Entomologie du Canada aura lieu 22 octobre 1991 (1700 - 1800 h) à le Ramada Renaissance du Parc, à Montréal, Québec.

**La conseil de direction:** La conseil de direction sa réunira le 19 et 20 octobre, 1991 à le Ramada Renaissance du Parc, à Montréal, Québec.

Tous sujets pour être considérés doivent être soumis au secretaire, Dr. R.J. West.

Rick West, Secretary  
Forestry Canada  
Newfoundland and Labrador Region  
P.O. Box 6028  
St. John's, Newfoundland  
A1C 5X8

Fax. 709-772-2576.

## President's Update

The Executive Committee held its mid-term meeting recently in Ottawa and I wish to share with you some of the discussions from that meeting.

The Society is in good shape financially according to our Auditors and the Treasurer, Bob Footitt. We are putting money in the bank once again, thanks to several cost-cutting measures, some savings on publication of *The Canadian Entomologist* and rent from the headquarters of the Society. The "house" is functioning well and rent from the second floor should cover all projected costs of maintaining the Building. The Scholarship/Travel Fund increased in value by approximately \$9,000 last year and, with continuing modest annual donations, should be able to carry both our scholarships and the travel grant awards.

Savings in time of the Managing Editor, and printing and mailing costs have arisen from changing publication of *The Canadian Entomologist* from monthly to bi-monthly. Hugh Danks, Chairman of the Publications Committee, has received no complaints about this new schedule.

An updated membership list, in a format similar to the *Bulletin*, should be published this summer. The list will include not only addresses and phone numbers, but also FAX numbers and E-MAIL addresses, where available. One of the members also has offered to set up an E-MAIL network and bulletin board for the Society at no cost. This should provide us with a very inexpensive method of communication with other members. The student survey, appearing elsewhere in this issue, also suggests that an E-MAIL network be set up amongst the student members.

"Diseases and Pests of Vegetable Crops in Canada" should be sent to the printers for cost estimates in the summer, to the chosen printer by fall and be ready for sale in December. Hopefully, the French edition will follow shortly thereafter.

Those of you maintaining insects in culture who have not sent names of the species to Dr. J.S. Kelleher for inclusion on the list of Insect Cultures in Canada, please do so. The updated list should be printed within the next couple of weeks.

This appears to some to be a low point in Canada for science in general and our discipline, in particular. Yet the Society is a bright light at this time. Many individuals are spending a lot of time doing volunteer work on behalf of the Society. I hope you appreciate their efforts. I certainly do. It has made my first six months as President of the Society a relatively easy task.

J.E. Laing  
President

## Publications Committee

### Recommendations and Information from the Publications Committee to the Executive Council, April 1991

The following information and recommendations to the Executive Council (EC) arise from the work of the Publications Committee (PC) October 1990 - February 1991.

#### 1. Results of publishing *The Canadian Entomologist* six times per year

The PC was asked by the 1989 Governing Board to evaluate the results of publishing the journal six rather than twelve times per year, and to report to the 1991 EC meeting.

- Little or no adverse effects or comments from members have been reported as a result of the less frequent issues. (But nor, of course, has there been any favourable comment from members on the aspect of timing.)

- All issues are now large enough to proceed without delaying for extra manuscripts to arrive to make up a minimum size (as happened occasionally in earlier years).

- The Managing Editor reports that handling of issues is now less demanding (and the new timetable permits vacations, for example, of more than one week if desired - previously not possible).

- Some costs appear to have been saved. This saving is difficult to analyze because costs keep increasing (especially postage); the basis of costs, such as weight divisions for postal rates, may change, and the annual number of pages also varies. However, as a first approximation:

*The Canadian Entomologist* Printing (less cost for more pages)

1989 (12 issues, 1136 pp., \$84,131) - \$74.05 per page.

1990 (6 issues, 1281 pp., \$81,402) - \$63.55 per page.

*The Canadian Entomologist* Mailing costs (slight increase in costs, but more pages)

1989 \$14,663: \$12.90 per page.

1990 \$15,193: \$11.86 per page.

Other costs

Modest costs for envelopes, etc., also have been saved.

The production of six issues of *The Canadian Entomologist* per year therefore seems to have been temporally and financially advantageous, without any identified adverse effects. **The PC therefore recommends that *The Canadian Entomologist* continue to be published only six times per year.** [The Society's administrative assistant notes that the bigger *Bulletins* cost more to mail than the journal, and *Bulletin* costs will be even higher this year with postal weight division changes.]



## 2. Possible award for scientific publication

The Governing Board, at its meeting of October 1990, requested that the PC “examine the feasibility of creating a new award, the Hocking-Ball Award, to honour two entomologists who have contributed much to scientific publishing in Canada.”

The PC has considered this question. Notwithstanding the fact that Dr. Hocking and Dr. Ball are well worthy of recognition, **the PC recommends that no such award be established**, on the basis of its limited feasibility, and the probability that there would be little overall benefit to the Society.

Many concerns about the logistics of such an award, and consequently its fairness, were raised. Both the potential guidelines and the potential selection process cause difficulties: the desirability but perhaps infeasibility of some connection with or restriction to Society publications (too few papers; *Memoirs* different from *Can. Ent.*), or Society members (how can all of an individual's publications be tracked); the establishment of a group qualified to judge; the difficulty of judgement among contributions from different subdisciplines; the fact that measured judgements of an important scientific publication may not be possible for many years; and so on.

## 3. Reprints from the *Memoirs*

The Managing Editor suggested that reprints not be allowed from the *Memoir* series, a possibility applicable only to edited volumes composed of several papers by different authors, such as proceedings of symposia.

The Managing Editor pointed out that arranging the volumes for reprints takes a few extra pages, which must be paid for by the Society unless proceedings editors are required to pay the extra cost; and in particular that allowing reprints would probably greatly reduce the sales of *Memoirs*, a particular disadvantage because the *Memoir* series is much less soundly based financially than *The Canadian Entomologist* (see below).

Nevertheless, **the Publications Committee recommends that such reprints should continue to be provided**, as a service to members, to encourage individual communication of scientific information, and in the best interests of entomological science. Restricting reprints from the *Memoirs* to make it unlike other scientific journals would not be desirable. Editors of proceedings volumes should be responsible for paying for extra pages - such as title page, contents pages, indexes, and - for the time being - extra space occasioned by requests for reprints. However, **the PC also recommends that the financial basis of the *Memoir* series itself be reviewed**, rather than simply addressing the subject of reprints in isolation.

## 4. Funding of the *Memoir* series

The following partial analysis provides background information relevant to the PC's recommendation that the financial basis of the *Memoir* series be reviewed. This necessity is a direct result of the reduction of page charges recently instituted.

Some current features of *Memoir* funding are:

1. The papers published are commonly very large, but most of them are of limited interest despite their long term scientific value.
2. The cost of production per copy is relatively high (page for page) because the press run is relatively low.
3. Members need not buy the *Memoirs* (unlike *The Canadian Entomologist*) as a condition of membership.
4. Members who elect to buy the *Memoirs* pay only \$20 per year. (A higher fee would likely reduce these sales.)
5. Page charges are artificially low, and lower than the cost of production.
6. The numbers of *Memoirs* to be published each year is limited only by the numbers of papers submitted (this policy should not be changed).

Some working suggestions are:

1. The costs of reprints and page charges could differ between *The Canadian Entomologist* and the *Memoirs*, because *The Canadian Entomologist* is supplied as part of the membership, whereas the *Memoirs* are not.
2. Each *Memoir* could come closer to paying for itself, both for the series in general (by page charge or other adjustments), and for specific troublesome or more costly items e.g. by modest additional page charges or reprint fees for multiple-paper volumes).
3. If printing costs continue to exceed page charges, long term financial instruments could be used to average the effects of publishing different numbers of volumes per year (e.g. by placing a percentage of *Memoir* subscription funds in a *Memoir* Account in years when relatively few volumes are published, and withdrawing them in especially costly, many-volume, years).

Some available options are:

1. Charge more:
  - raise subscriptions
  - raise member subscription prices
  - raise page charges
  - raise reprint prices
  - surcharge for longer *Memoirs* (e.g. over 200 or 300 pp.)
  - raise separate volume prices
  - reduce member discounts
2. Sell more:
  - link memberships to the *Memoirs*
  - offer special memberships (e.g. any single annual *Memoir* can be requested for a fixed annual fee paid with membership)
  - market the publications more aggressively
  - require authors or institutions to buy a set number of copies of single-paper volumes
  - set a minimum reprint number (e.g. 200) for multiple-paper volumes

### 3. Reduce costs:

- reduce quality [not recommended; see 1987 report of PC]
- limit maximum size of papers published
- limit number of *Memoirs* per year [not recommended]

### 5. Request concerning publications by Polish authors who are not members of the E.S.C.

The Society has received a request to waive the necessary membership requirement for certain Polish authors who might be supported by payment of page charges [through the Poland/Canada Agriculture Cooperative Program and the Department of External Affairs] to publish papers that are acceptable through the normal process in *The Canadian Entomologist*.

Some PC members recommended that the Society insist that the cost of membership be covered by the sponsoring program (through membership for the contributing author, or by increased page charges, for example), because membership fees support the publication of the journal. Other PC members felt that such an arrangement would be churlish and not to the credit of the E.S.C., so that membership requirements should be waived, at least for a two to three year trial period, especially since other professional societies are likely to have waived the requirement.

Nevertheless, there would be reciprocal advantages if the Polish authors were to join the E.S.C. The place of scientists in the international scientific community would be favoured if they joined the Society (as well as published in the journal), because continuing contacts with members in North America might be developed. Perhaps as valuable, a subscription for leading Polish institute(s), or at least for that Polish institute submitting significant numbers of papers, would also favour long-term cooperation and make issues of the journal accessible to the Polish scientists, so supporting the aims of the sponsorship program.

**The PC recommends that the requirement for membership not be enforced for a trial period, but that a request be made to the sponsors to sponsor a small number of institutional subscription(s), in view of the continuing advantages to Polish entomology of such a development.**

### 6. Charges by reviewers

An Associate Editor received an invoice from a referee for reviewing a scientific manuscript. Because one of the accepted professional responsibilities of scientists is to review papers without charge (as part of a reciprocal process of scientific publication), the Society declined to pay this invoice. The PC suggests that the general principle that the Society not pay for reviews be confirmed. [If requested, however, retired or unaffiliated scientists only might on occasion receive overseas postage fees through the use of international postal coupons.]

### 7. Financial support for translation of abstracts

At its meeting of October 1990, the Governing Board indicated its wishes as follows: "The Publications Committee will write to the appropriate government agency to obtain ongoing support for the translation of abstracts for E.S.C. publication."

The PC points out that the federal departments of Agriculture, Forestry and Environment will not provide independent funds for translation, but will translate abstracts/resumes for their employees. However, the Scientific Editor has found that the delivery of abstracts cannot be guaranteed within the one month interval established by the Society for translation of the abstracts after papers have been accepted following the review process. Nor are such abstracts necessarily consistent with one another in style and quality, the reason for which the Society has commissioned a single translator for all of its abstracts.

Moreover, the Secretary of State will not provide "permanent" funding for such continuing translations, even though "short term" funding (e.g. for translation of a single document such as the by-laws) is available.

H. V. Danks  
Chairman  
22 February 1991

## **Auditor's Report**

### **To the Members of the Entomological Society of Canada:**

We have audited the balance sheet of the Entomological Society of Canada as at December 31, 1990 and the statements of income and the equity for the year then ended. These financial statements are the responsibility of the Society's management. Our responsibility is to express an opinion on these financial statements based on our audit.

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

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Society as at December 31, 1990 and the results of its operations for the year then ended in accordance with generally accepted accounting principles.

McCay, Duff & Company  
Chartered Accountants  
Ottawa, Ontario  
February 27, 1990

**Entomological Society of Canada Balance Sheet  
as at December 31, 1990**

**ASSETS**

<b>GENERAL FUND</b>	<b>1990</b>	<b>1989</b>
<b>CURRENT</b>		
Cash	\$115,630	\$235,076
Accounts receivable	24,237	34,909
Advances to International Congress	-	3,142
Accrued interest receivable	7,615	8,660
Prepaid expenses	<u>5,864</u>	<u>3,236</u>
	153,346	285,023
 INVESTMENTS (note 2)	 <u>275,075</u>	 <u>364,975</u>
	<b>428,421</b>	<b>649,998</b>
 <b>ENDOWMENT FUND</b>		
Cash	8,026	27,178
Accrued interest	975	525
Investments (note 2)	<u>38,900</u>	<u>15,900</u>
	<b>47,901</b>	<b>43,603</b>
 <b>BUILDING FUND</b>		
Fixed assets (note 3)	242,800	-
	 <b>\$719,122</b>	 <b>\$693,601</b>

**LIABILITIES**

<b>GENERAL FUND</b>		
<b>CURRENT</b>		
Accounts payable	\$28,145	\$20,753
Deferred revenue	127,920	125,815
Due to Scholarship Fund	-	<u>2,288</u>
	<b>156,065</b>	<b>148,856</b>

**EQUITY**

<b>GENERAL FUND</b>	272,356	501,142
<b>ENDOWMENT FUND</b>	47,901	43,603
<b>BUILDING FUND</b>	<u>242,800</u>	-
	<b>563,057</b>	<b>544,745</b>
	 <b>\$719,122</b>	 <b>\$693,601</b>

**Statement of Equity  
for the year ended December 31, 1990**

<b>GENERAL FUND</b>	<b>1990</b>	<b>1989</b>
BALANCE - BEGINNING OF YEAR	\$501,142	\$507,797
Appropriation from Endowment Fund	-	2,488
Appropriation from (to) Building Fund	<u>(247,085)</u>	-
	<u>(247,085)</u>	<u>2,488</u>
	254,057	510,285
Net revenue (expenditure) for the year	<u>18,299</u>	<u>(9,143)</u>
BALANCE - END OF YEAR	<b>\$272,356</b>	<b>\$501,142</b>
 <b>ENDOWMENT FUND (note 4)</b>		
BALANCE - BEGINNING OF YEAR	\$43,603	\$41,244
Appropriation to General Fund	-	<u>(2,488)</u>
	43,603	38,756
Bequest	-	472
Gain on sale of investments	-	60
Interest income for the year	5,098	4,315
Page charges and reprints	<u>(800)</u>	-
	<u>4,298</u>	<u>4,847</u>
BALANCE - END OF YEAR	<b>\$47,901</b>	<b>\$43,603</b>
 <b>BUILDING FUND (note 5)</b>		
BALANCE - BEGINNING OF YEAR	-	-
Appropriation from General Fund	247,085	-
Expenses		
- insurance	344	-
- property taxes	2,012	-
- repairs and maintenance	857	-
- utilities	<u>1,072</u>	-
	<u>4,285</u>	-
BALANCE - END OF YEAR	<b>\$242,800</b>	<b>\$ -</b>

## Statement of Revenue and Expenditure

	BUDGET <i>Can Ent</i>	ACTUAL <i>Can Ent</i>	BUDGET <i>Memoirs*</i>
<b>REVENUE</b>			
Regular memberships	\$22,000	\$21,793	\$2,000
Student memberships	1,800	1,820	-
Sustaining memberships	300	100	-
Subscriptions	94,600	94,725	47,400
Reprints	14,000	17,257	-
Page charges	27,500	34,420	20,000
Back issues	3,500	3,998	-
Sales of <i>Memoirs</i>	-	-	4,000
Sales of Arctic Arthropods and Bibliography	500	390	-
Gain on currency exchange	-	-	-
Government grant	-	-	-
Contracts and services	-	-	-
Miscellaneous	-	-	-
	<b>164,200</b>	<b>174,503</b>	<b>73,400</b>
<b>EXPENDITURE</b>			
Publishing and mailing costs	98,000	90,561	57,000
Reprint costs	8,500	7,958	-
<i>Bulletin</i> publishing and mailing	-	-	-
Salaries and benefits	52,596	56,289	21,165
Editor's expenses	5,000	4,699	3,000
Office	9,000	7,226	2,000
Professional fees	1,800	1,550	-
Prizes, awards, brochure, etc.	-	-	-
Graduate research/travel scholarship	-	-	-
Honoraria	1,500	1,875	-
Committees:			
Heritage publication	-	-	-
Science Policy	-	-	-
Other	-	-	-
Support of other organizations	-	-	-
Annual Meeting:			
Grant	-	-	-
Honorees	-	-	-
Governing Board:			
Interim Meeting	-	-	-
Annual meeting	-	-	-
Other meetings	-	-	-
President's discretionary expenses	-	-	-
General	-	-	-
	<b>176,396</b>	<b>170,158</b>	<b>83,165</b>
<b>REVENUE (EXPENDITURE) FOR THE YEAR</b>			
<b>FROM OPERATIONS</b>	(12,196)	4,345	(9,765)
Interest on investments	-	-	-
Gain (loss) on sale of investments	-	-	-
	-	-	-
<b>NET REVENUE (EXPENDITURE) FOR</b>	<b>(\$12,196)</b>	<b>\$4,345</b>	<b>(\$9,765)</b>
<b>THE YEAR</b>			

**for the year ended December 31, 1990**

ACTUAL <i>Memoirs*</i>	BUDGET SOCIETY	ACTUAL SOCIETY	1990 BUDGET	1990 ACTUAL	1989 ACTUAL
\$1,890	\$22,000	\$21,792	\$46,000	\$45,475	\$46,325
120	1,800	1,820	3,600	3,760	3,705
-	300	100	600	200	700
47,463	-	-	142,000	142,188	147,560
-	-	-	14,000	17,257	15,509
13,058	-	-	47,500	47,478	66,006
-	-	-	3,500	3,998	3,909
4,643	-	-	4,000	4,643	12,243
-	-	-	500	390	419
-	-	1,107	-	1,107	370
-	-	-	-	-	1,000
-	-	-	-	-	-
-	4,000	7,527	4,000	7,527	2,278
<b>67,174</b>	<b>28,100</b>	<b>32,346</b>	<b>265,700</b>	<b>274,023</b>	<b>300,024</b>
31,994	-	-	155,000	122,555	145,426
-	-	-	8,500	7,958	8,483
-	12,000	15,840	12,000	15,840	21,472
22,651	10,794	11,552	84,555	90,492	81,423
2,819	-	-	8,000	7,518	7,818
1,605	9,000	7,226	20,000	16,057	29,645
-	1,800	1,550	3,600	3,100	3,150
-	1,400	1,455	1,400	1,455	1,520
-	-	4,000	-	4,000	2,000
-	1,400	1,750	2,900	3,625	2,900
-	-	-	-	-	4,205
-	2,000	142	2,000	142	1,861
-	500	-	500	-	-
-	1,850	3,027	1,850	3,027	3,849
-	4,000	4,000	4,000	4,000	4,000
-	3,000	1,259	3,000	1,259	2,889
-	2,900	2,417	2,900	2,417	2,691
-	15,000	12,551	15,000	12,551	25,997
-	1,500	2,181	1,500	2,181	1,224
-	3,000	1,355	3,000	1,355	1,026
-	-	544	-	544	109
<b>59,069</b>	<b>70,144</b>	<b>70,849</b>	<b>329,705</b>	<b>300,076</b>	<b>351,688</b>
8,105	(42,044)	(38,503)	(64,005)	(26,053)	(51,664)
-	50,000	44,832	50,000	44,832	51,366
-	-	(480)	-	(480)	(8,845)
-	<b>50,000</b>	<b>44,352</b>	<b>50,000</b>	<b>44,352</b>	<b>42,521</b>
<b>\$8,105</b>	<b>\$7,956</b>	<b>\$5,849</b>	<b>(\$14,005)</b>	<b>\$18,299</b>	<b>(\$9,143)</b>

\* and other publications



## NOTES TO FINANCIAL STATEMENTS

### 1. SIGNIFICANT ACCOUNTING POLICIES

(a) Revenues and expenses 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 by the receipt or payment of money.

(b) Furniture and equipment purchase are expensed in the year of acquisition.

(c) Entomological Society of Canada is incorporated without share capital under Part II of the Canada Companies Act and is a non-taxable organization.

### 2. INVESTMENTS

GENERAL FUND	1990	1989
Bonds, at cost (market value 1990 - \$272,275; 1989 - \$370,750)	<b>\$275,075</b>	<b>\$364,975</b>
 ENDOWMENT FUND		
Bonds, at cost (market value 1990 - \$40,515; 1989 - \$17,880)	<b>\$38,900</b>	<b>\$15,900</b>

### 3. FIXED ASSETS

	1989		1988
	Cost	Accumulated Depreciation	Net
Building	<b>\$242,800</b>	-	<b>\$242,800</b>
			-

### 4. ENDOWMENT FUND

The direction of the bequest, by which this fund was founded, states that without imposing 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*.

### 5. BUILDING FUND

This fund was created through an appropriation from the General Fund to recognize the expenses of the building independent of operational expenditures.

### 6. STATEMENT OF CHANGES IN FINANCIAL POSITION

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

## **Auditor's Report - Scholarship Fund**

### **To the Members of the Entomological Society of Canada:**

We have audited the balance sheet of the Entomological Society of Canada - Scholarship Fund as at December 31, 1990. This financial statement is the responsibility of the Fund's management. Our responsibility is to express an opinion on this financial statement based on our audit.

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

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

In our opinion, except for the effect of adjustments, if any, which we might have determined to be necessary had we been able to satisfy ourselves concerning the completeness of donations referred to in the preceding paragraph, this financial statement presents fairly, in all material respects, the financial position of the Fund as at December 31, 1990 and the results of its operations for the year then ended in accordance with generally accepted accounting principles.

McCay, Duff & Company  
Chartered Accountants  
Ottawa, Ontario  
February 26, 1991

## Scholarship Fund - Balance Sheet as at December 31, 1990

### ASSETS

	<u>1990</u>	<u>1989</u>
<b>CURRENT</b>		
Cash	\$ 8,930	\$21,092
Accrued interest receivable	<u>1,113</u>	<u>649</u>
	10,043	21,741
<b>DUE FROM GENERAL FUND</b>	-	2,288
<b>INVESTMENTS (note 2)</b>	<u>63,925</u>	<u>40,925</u>
	<b>\$73,968</b>	<b>\$64,954</b>

### EQUITY

<b>INCOME FUND</b>		
BALANCE - BEGINNING OF YEAR	\$ 15,237	\$12,433
Gain on sale of investment	-	30
Interest income	<u>7,605</u>	<u>6,774</u>
	22,842	19,237
Scholarship awards	<u>4,000</u>	<u>4,000</u>
BALANCE - END OF YEAR	18,842	15,237
<b>CAPITAL FUND</b>		
BALANCE - BEGINNING OF YEAR	49,717	47,429
Donations received	<u>5,409</u>	<u>2,288</u>
BALANCE - END OF YEAR	<u>55,126</u>	<u>49,717</u>
	<b>\$73,968</b>	<b>\$64,954</b>

### NOTES TO FINANCIAL STATEMENT

#### 1. SIGNIFICANT ACCOUNTING POLICY

Revenues and expenses 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 by the receipt or payment of money.

#### 2. INVESTMENTS

	1990	1989
Bonds, at cost (market value 1990 - \$64,501; 1989 - \$40,928)	<b>\$63,925</b>	<b>\$40,925</b>

## Scholarship Fund - Balance Sheet as at December 31, 1990

### ASSETS

	<u>1990</u>	<u>1989</u>
<b>CURRENT</b>		
Cash	\$ 8,930	\$21,092
Accrued interest receivable	<u>1,113</u>	<u>649</u>
	10,043	21,741
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	<b>\$73,968</b>	<b>\$64,954</b>

### NOTES TO FINANCIAL STATEMENT

#### 1. SIGNIFICANT ACCOUNTING POLICY

Revenues and expenses 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 by the receipt or payment of money.

#### 2. INVESTMENTS

	1990	1989
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# Results of the survey of student members of the Entomological Society of Canada

## Prepared by the Student Affairs Committee

The survey of the student members of the Entomological Society of Canada was conducted in order to:

- i. profile the student member to the Society;
- ii. identify means whereby the Society can be changed to better serve the student members.

We present the survey questions then summarize the results and make recommendations based on these results.

### Response to Survey

No. of surveys sent out:	79
No. respondents:	39
Response rate:	49%

### Demographics

1. Mean Age: 31±4 (F - 29.5, M - 31.6)
2. Sex: F - 13, M - 24, ? - 2
3. Level of study: BSc - 1, MSc - 11, PhD - 27  
F - 1 7 5  
M - 0 4 20
4. No. years of graduate study in entomology: 4.6±2.6 (F - 3.1, M - 5.4)
5. No. years as a member of ESC: 4.7±3.0 (F - 2.8, M - 5.7)
6. Why did you choose to study entomology? (2 choices)  
University courses/professors: 30 (1st choice - both sexes)  
Amateur entomology background: 15 (F - 4th, M - 2nd)  
Job experience elsewhere: 13 (F - 2nd, M - 4th)  
Other: 10 (M - 3rd)  
Job experience at university: 7 (F - 3rd)  
Experience with ent. or naturalist Society: 2
7. Why did you join the ESC? (2 Choices)  
Because I am studying entomology: 23 (1st choice - both sexes)  
To enhance professional prospects: 17 (2nd choice - both sexes)  
To go to meetings/give papers: 14 (3rd choice - both sexes)  
To receive journal: 9  
Advised to do so by supervisor: 7  
To be eligible for ESC awards: 4  
Other: 3
8. Have you applied for, or been in competition for scholarships, paper competitions, or travel grants from the ESC?  
Yes - 18/39 (F - 7/13, M - 10/24)

## **You and the Society - Questions**

*A response of '5' indicated strong agreement, '1' indicated strong disagreement, '3' indicated no opinion.*

9. The primary role of the ESC for students is in the area of job acquisition:
10. The Society does a good job of informing students of policy decisions, awards/scholarships, job prospects:
  11. Students should have a greater role in administration of the Society (e.g. a member on the Governing Board):
  12. The Student Affairs Committee does a good job of representing the interests of students to the Society:
  13. There should be a student representative to the Society in every entomology/biology department:
  14. I would consider acting as a departmental student representative to the ESC:
  15. I would consider working in another administrative capacity for the Society (e.g. committee):
  16. I do not feel that I have time to be involved in Society business:
  17. Is your institution connected to any electronic mail networks (e.g. Bitnet, Fidonet) - Yes/No:
  18. Electronic mail networks should be used to facilitate communication among departments and laboratories:
  19. The students should use the Society as a forum to discuss academic policies such as course curricula, authorship etc.:
  20. The Society should have more grants, scholarships and exemptions from publication charges for students:
  21. The students should conduct an award competition for the best teacher/supervisor in the ESC:
  22. The ESC should consider an entomological games competition for teams of students (format similar to "Reach for the Top" or the "Linnaean Games" of the Ent. Soc. America), to be run at the annual meeting:
  23. The students should organize a symposium on job finding techniques (resume preparation, interviews etc.) at the national meeting: i. annually; ii. occasionally:
  24. I feel that women are afforded equal opportunities to: i. study in entomology; ii. work in entomology:
  25. I agree that hiring decisions should be based partially on balancing sexual inequalities in personnel:

## **Summary and Recommendations**

In this section, we attempt to summarize and interpret the raw data from the survey, and make recommendations to the Governing Board based on this data. We received a response from nearly half (49%) of the student membership of the ESC, so the committee feels that the survey reflects the attitudes and concerns of the student members vis-à-vis the ESC.

The demographic information is largely self explanatory, however we note with some surprise that the average age of students was over thirty! If the mean number of years in entomological studies are subtracted from the mean student age, the result is 26.4 years. This data would suggest that there are few students that enter graduate programs directly out of their BSc. What are they doing between the end of their undergraduate studies and the beginning of their graduate program? Are they taking periods of absence during their programs?

By far the most common method that students are “turned on” to study entomology was through their university courses or professors. Perhaps the professors that teach undergraduate entomology could be encouraged to disseminate information about the ESC or careers in entomology to their students. If a poster or flyer advertising the ESC was available for distribution (the ESA has a nice one!), perhaps even greater interest in entomology could be fostered and more young members recruited for the Society.

We are encouraged that about half of our respondents had applied for a scholarship, travel grant or had been in competition for an award offered by the ESC.

### **Students and The Society**

In the following section, we attempt to classify the responses to the questions 9-25 by the deviation of the mean response from a response of “3” (no opinion). We (arbitrarily) classified mean responses of less than 2 or more than 4 as being strong disagreement or agreement, respectively. Those falling in 2 to 2.5 and 3.5 to 4 were classified as disagreement or agreement, and mean responses between 2.5 and 3.5 were considered to be neutral to that question.

#### **The students felt strongly about several issues:**

For representation on the Governing Board - strong agreement (Mean response 4.5)

Use of electronic mail for ESC communications - strong agreement (4.5)

More grants, scholarships and exemptions - strong agreement (4.3)

#### **The students had feelings on these issues:**

Primary role of ESC is in area of job acquisition - disagreement (2.1)

The student affairs committee represents student interests well - disagreement (2.3)

Students are willing to work for the ESC in some capacity - agreement (3.8)

No time to be involved in ESC business - disagreement (2.0)

The Society should be a forum for discussion of academic policies - agreement (3.8)

Occasional student run job skills symposium at National meeting - agreement (4.0)

#### **A number of issues engendered no particular interest from the students:**

Student representatives to ESC in departments/Willingness to serve in this position (3.1/3.1)

Award for best supervisor (3.4)

Linnaean games at meetings (2.8)

Annual job skills symposium at National meeting (2.8)

### **Women Students In Entomology**

We asked several questions concerning women in entomology, and have interpreted some of the other information by the gender of the respondent. We used this information to write a brief section on any unique attributes/opinions of the woman student in our Society. It must be stated that the number of women respondents was small (13), so the portrayal of an average "woman student" based on this survey may be a bit bold.

Women students tended to be younger (29.5) than men (31.6) and had studied entomology for a shorter time (3.1 vs 5.4 years). More than half of the female respondents were studying at a pre-PhD level (8/13) whereas most male respondents were involved in studies at the PhD level (20/24). It would be interesting to know if this is a temporary "glitch" in the numbers, or a reflection of different career goals/opportunities between the sexes.

After university professors or courses, females and males expressed different reasons for becoming involved in entomological studies. Women came to entomology from job experience either in or out of the university system. Men cited an amateur background as the second most frequent introduction to entomology and job experience as the fourth. This difference in background is also reflected by the responses to questions 4 and 5. On average, males were members of the Society before they started graduate studies, while females joined after the commencement of a graduate program.

The overall responses to questions 24 and 25 suggest that students strongly believe that women have an equal chance to study in entomology and believe that they have an equal chance of working in the field. Interestingly, most of the disagreement with these beliefs came from male respondents! Based on mean response, there was a slightly negative attitude towards gender equality in hiring (#25) but this statistic does not reflect the distribution of responses to the question. For both sexes, the "agree" responses were roughly divided between moderate and strong agreement. Virtually all of those people who disagreed with the proposition felt very strongly about it; many of these respondents added comments emphasizing their distaste of this hiring policy. Roughly half of the women responded favourably to gender based hiring (7/12), while 75% of the male respondents opposed the policy (18/24).

### **Recommendations to the Board**

#### **I. Some form of student representation on the governing board.**

**Rationale:** The Governing Board consists of 16 voting members. With students comprising 15% of the membership, we feel that students should have voting representation on the Board. We understand that there are expenses incurred (transportation/accommodation for meetings) for every board member, and that individual students are relatively transitory. For these reasons, we suggest that one board position could be staffed each year by the member(s) of the Student Affairs Committee in the closest geographical proximity to the meeting place(s). This (these) individuals would be responsible for representing student interests on the board, and communicating pertinent decisions of the board to the student members.

#### **II. The establishment/publication of an electronic mail (bitnet) directory for the ESC.**

**Rationale:** Thirty-three of thirty-seven respondents to the survey had electronic mail facilities



in their department/workplace. We believe that this is reflective of the accessibility of E-mail to the membership in general. E-mail is a quick, efficient long-distance communication system that can virtually replace telephones and Fax machines for most applications. E-mail is free to those members that have mainframe computer access. We are unsure when the last membership directory was published, but we would advise the Society to publish an updated directory including E-mail numbers. All members should be encouraged to include their E-mail number as a matter of course in their addresses (just as one includes a Fax no.). The costs to the society of publishing this directory would likely be quickly-recouped by savings in long distance telephone and Fax communications!

### **III. More scholarships/awards for students.**

**Rationale:** We recognize that the Society has recently made several important financial concessions in this area (publication cost waivers, travel grants), and that the amount of "money out" is limited by the amount of money! We note that the awards system is used; half of the respondents have applied for some sort of award from the Society. There was strong agreement among the student members that more awards should be available. We believe that awards can function as an important motivation/reward without being expensive!

The ESA has student awards, named after several of their most famous entomologists, and involving small cash awards (\$100.00) and featured papers at regional or national meetings. Could we not do this? How about an award(s), consisting of transportation to and/or accommodation at the national meetings, and connected with a featured paper? Or, a cheap relatively "non-elitist" award, in which meeting registration costs could be waived for some/all students presenting papers or posters at the national meeting? How about free memberships for outstanding undergraduates - based on projects done in their courses?

### **IV. A reduced student membership fee for those interested in a membership "without journal."**

**Rationale:** We received numerous comments on the high cost of society membership to students, and several suggestions on how to reduce this cost. One of the most interesting was the creation of a membership "without journal". Only 23% of the students listed the reception of the journal as one of the two reasons that they had joined the Society. Most students work or study in places with excellent access to the journal. The Entomological Society of New York offers a student membership without journal for 33% of the cost of a regular student membership. We propose that (at least for students) a class of membership "without journal" be created, and the cost of this membership be reduced by an amount equal to the cost of publishing/mailing the journal to the student. This would cost the Society nothing, and if the savings were significant, may encourage more students to join the Society. If the cost reduction was not significant, we suggest that the Society consider the subsidization of this class of membership (for students only?) to the level of ca. 50% reductions on the current membership price.

### **V. A forum (*Bulletin*?) where interested students could find out about committee openings or volunteer work with the Society.**

**Rationale:** Many respondents were interested in working for the society, but several commented that they didn't know how to find out about serving on committees or other volunteer work. To the best of our knowledge, these positions are frequently filled on an informal basis and the membership at large is unaware of them. We propose that the Society develop a protocol where the *Bulletin* is used to advertise positions available on committees, volunteer positions at meetings etc. Perhaps student volunteers could receive free registration at meetings?

**VI. The Student Affairs Committee should be officially empowered to run a job skills symposium every third or fourth year.**

**Rationale:** In the past, this committee has run a resume/jobs available table at meetings on a relatively ad hoc basis. Based on the requests of the respondents, we suggest that the Student Affairs Committee be made responsible for arranging/chairing a job skills session (possibly evening, so as to not conflict with other sessions). If this symposium was run every third or fourth year, most students would have an opportunity to "check it out" at some point during their student career.

**Your Turn**

The results of the student survey and the recommendations of the Student Affairs Committee were presented to the interim meeting of the Governing Board in April. The board recommended that a summary of the results and recommendations be published in the *Bulletin* and that comments be solicited from the membership at large. At the fall meeting in Montreal, the Governing Board plans to take further action with respect to the recommendations. Both the Board and the Student Affairs Committee encourage all members to comment on the recommendations to the Society - please do so in writing before September 15, 1991. Comments, criticisms and suggestions can be sent to:

Rick West, Secretary ESC  
Forestry Canada  
Newfoundland and Labrador Region  
Box 6028  
St. John's, Nfld.  
A1C 5X8

**Graduate Research-Travel Grants**

Research Travel Grants, each of \$2000, have been awarded to Mr B. Landry and Mr B. J. Sinclair, both of whom are in the Department of Biology at Carleton University.

Mr Landry is nearing completion of his Ph.D. on Crambinae (Lepidoptera: Pyralidae). He will use the award to travel to the British Museum to examine type specimens relevant to his thesis.

Mr Sinclair is also in a Ph.D. programme, in which he is completing a revision of species within three genera of Clinocerinae (Diptera: Empididae). Mr Sinclair will use the award to examine type specimens at The American Museum of Natural History, New York, The Museum of Comparative Zoology, Harvard University, and The U.S. National Museum of Natural History, Washington, D.C.

N. J. Holliday  
Chairperson  
Graduate Research-Travel Grants Committee

CONGRES CONJOINT DE LA SOCIÉTÉ CANADIENNE D'ENTOMOLOGIE, DE LA  
SOCIÉTÉ D'ENTOMOLOGIE DU QUÉBEC ET DE LA SOCIÉTÉ D'ENTOMOLOGIE DE  
L'ONTARIO

Montréal, 21-23 octobre 1991  
Ramada Renaissance du Parc

**Dimanche, 20 octobre 1991**

17h00 à 21h00           Inscription  
19h00 à 20h00           Rencontre des étudiants avec le conseil d'administration

**Lundi, 21 octobre 1991**

9h00 à 17h00           Inscription  
9h00 à 9h30           Cérémonies d'ouverture  
                          Décorations de la SEC  
                          Allocution, Médaille d'Or  
10h30 à 12h00          Symposium "Entomologie et Société"  
                          J.-P. Bourassa et C. Vincent  
  
10h00 à 17h00          Exhibits  
13h30 à 16h45          Symposium: "Apprentissage chez les insectes"  
                          C. Vincent et B. Roitberg  
13h00 à 17h00          Session de posters  
17h00 à 18h00          Assemblée générale annuelle de la S.E.Q.  
                          Assemblée générale annuelle de la E.S.O.  
20h00 à 22h00          Cocktail à l'Insectarium de Montréal

**Mardi, 22 octobre 1991**

9h00 à 12h00           Symposium: "Insectes et résistance au froid"  
                          H. V. Danks et D. Coderre  
9h00 à 12h00           Symposium: "Les arthropodes des tourbières"  
                          Steve Marshall  
9h00 à 12h00           Communications scientifiques  
10h00 à 17h00          Exhibits  
13h30 à 16h30          Communications scientifiques  
  
13h30 à 16h30          Symposium: "Les arthropodes des tourbières"  
                          Steve Marshall  
13h30 à 16h30          Communications scientifiques  
17h00 à 19h00          Assemblée générale annuelle de la S.E.C.  
19h00                    Banquet

**Mercredi, 23 octobre 1991**

9h00 à 12h00                      Communications scientifiques  
9h00 à 12h00                      Communications scientifiques  
12h00 à 14h00                    Réunion d'affaires, Conseil d'administration de la S.E.C.

•••

***Pour plus d'informations veuillez entrer en contact avec:***

Charles Vincent (Président)  
Station de recherches, Agriculture Canada  
430 boul. Gouin, Saint-Jean-sur-Richelieu  
Qué. J3B 3E6                      Tél: (514) 346-4494/Fax: (514) 346-7740

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Hugh V. Danks (Symp. "Insectes et résistance au froid")  
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National Museum of Natural Science  
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Bernard Roitberg (Symp. "Apprentissage chez les insectes")  
Department of Biological Sciences  
Simon Fraser University  
Burnaby, B.C. V5A 1S6      Tél.: (604) 291-4581/ Fax: (604) 291-3496

Jean-Pierre Bourassa (Symp. "Entomologie et Société")  
Département de Chimie-Biologie  
Université du Québec à Trois-Rivières, C. P. 500  
Trois-Rivières, Qué. G9A 5H7      Tél.: (819) 376-5053/Fax: (819) 376-5012

JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA,  
THE ENTOMOLOGICAL SOCIETY OF QUEBEC AND  
THE ENTOMOLOGICAL SOCIETY OF ONTARIO

Montreal, 21-23 October 1991  
Ramada Renaissance du Parc

**Sunday, 20 October 1991**

17:00-21:00 Registration  
19:00-20:00 Students meet the Board

**Monday, 21 October 1991**

9:00-17:00 Registration  
9:00-9:30 Opening ceremonies  
ESC Awards  
Gold Medal Address  
10:30-12:00 Symposium "Entomology and Society"  
J.-P. Bourassa and C. Vincent  
10:00-17:00 Exhibits  
13:30-16:45 Symposium: "Learning in insects"  
C. Vincent and B. Roitberg  
13:00-17:00 Poster Session  
17:00-18:00 E.S.Q. Annual General Meeting  
E.S.O. Annual General Meeting  
20:00-22:00 Cocktail at Montreal's Insectarium

**Tuesday, 22 October 1991**

9:00-12:00 Symposium: "Insect cold hardiness"  
H. V. Danks and D. Coderre  
9:00-12:00 Symposium: "Peatland arthropods"  
Steve Marshall  
9:00-12:00 Scientific communications  
10:00-17:00 Exhibits  
13:30-16:30 Scientific communications  
13:30-16:30 Symposium: "Peatland arthropods"  
Steve Marshall  
13:30-16:30 Scientific communications  
17:00-19:00 E.S.C. Annual General Meeting  
19:00 Banquet

Wednesday, 23 October 1991

9:00-12:00 Scientific communications  
9:00-12:00 Scientific communications  
12:00-14:00 E.S.C. Governing Board Meeting

...

***For further information please contact:***

Charles Vincent (Chairman)  
Station de recherches, Agriculture Canada  
430 boul. Gouin, Saint-Jean-sur-Richelieu  
Qué. J3B 3E6 Tél.: (514) 346-4494/Fax: (514) 346-7740

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Jean-Pierre Bourassa (Symp. "Entomology and Society")  
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RÉUNION CONJOINTE DE LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA,  
DE LA SOCIÉTÉ D'ENTOMOLOGIE DU QUÉBEC  
ET DE LA SOCIÉTÉ D'ENTOMOLOGIE DE L'ONTARIO

Montréal, 21-23 octobre 1991

FORMULAIRE D'INSCRIPTION

Indiquez: Régulier  ou Etudiant

Nom \_\_\_\_\_ Titre \_\_\_\_\_  
nom de famille prénom initiales

Adresse: \_\_\_\_\_

Ville: \_\_\_\_\_ Province/Etat: \_\_\_\_\_

Code postal: \_\_\_\_\_ Téléphone: \_\_\_\_\_ (FAX): \_\_\_\_\_

Frais d'inscription-en \$ Can.  
(incluant les frais de banquet et la T.P.S.)  
Inscription tardive (après le 15 septembre 1991) ajoutez \$15.00

Frais d'inscription , régulier	\$ 85	_____
Frais d'inscription, étudiant	\$ 50	_____
Frais d'inscription, conjoint	\$ 40	_____
----- Nom du conjoint	TOTAL	_____

**LOGEMENT:** Un nombre limité de chambres ont été réservées à l'Hôtel Ramada Renaissance pour la réunion. Les taux pour ceux réservant avant le 13 septembre 1991 sont les suivants: occupation simple \$110, double \$125. Prière de faire vos réservations directement auprès de l'Hôtel Ramada Renaissance du Parc, 3625, Avenue du Parc, Montréal, Québec, Canada H2X 3P8.

Téléphone: (514) 288-6666. Réservations 1-(800)-268-8998 (sans frais).

Veuillez retourner ce formulaire ainsi que les frais d'inscription à:

Dr Charles Vincent  
Réunion conjointe 1991, S.E.C.-S.E.Q.-S.E.O.  
Station de Recherches, Agriculture Canada, 430 Boul. Gouin  
Saint-Jean-sur-Richelieu, Qué., Canada J3B 3E6

Prière de faire votre chèque au nom de la Société d'entomologie du Québec - Filiale de Montréal

JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA,  
THE ENTOMOLOGICAL SOCIETY OF QUEBEC AND  
THE ENTOMOLOGICAL SOCIETY OF ONTARIO

Montreal, 21-23 October 1991

REGISTRATION FORM

Check one: Regular  or Student

Name \_\_\_\_\_ Title \_\_\_\_\_  
Last first initial

Address: \_\_\_\_\_  
\_\_\_\_\_

City: \_\_\_\_\_ Province/State: \_\_\_\_\_

Postal code: \_\_\_\_\_ Telephone: \_\_\_\_\_ (FAX): \_\_\_\_\_

Registration fees, figures are in \$ Cdn  
(including banquet ticket and G.S.T.)  
Late registration (after 15 September 1991) add \$15.00 to each fee

Registration, regular	\$ 85	_____
Registration, student	\$ 50	_____
Registration, accompanying	\$ 40	_____
_____		
Name of accompanying person	TOTAL	_____

**ACCOMODATIONS:** A limited number of rooms have been set aside at the Ramada Renaissance Hotel for the conference. Rates for those making reservations prior to 13 September 1991 are as follows: single occupation \$110, double \$125. Please make your own reservations through: Ramada Renaissance du Parc, 3625, Avenue du Parc, Montreal, Quebec, Canada H2X 3P8.

Telephone: (514) 288-6666. Reservations 1-800-268-8998 (toll free).

Please return this form and registration fees to:

Dr. Charles Vincent  
Joint Meeting 1991, E.S.C.-E.S.Q.-E.S.O.  
Agriculture Canada Research Station, 430 Boul. Gouin  
Saint-Jean sur Richelieu, Qué. Canada, J3B 3E6

Please make your cheque payable to: Entomological Society of Quebec - Montreal Branch



RÉUNION CONJOINTE DE LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA,  
DE LA SOCIÉTÉ D'ENTOMOLOGIE DU QUÉBEC  
ET DE LA SOCIÉTÉ D'ENTOMOLOGIE DE L'ONTARIO

Montréal, 21-23 octobre 1991

FORMULAIRE DE PARTICIPATION: COMMUNICATIONS ORALES ET POSTERS

Veillez retourner à:: Dr. Charles Vincent  
Réunion conjointe 1991, S.E.C.-S.E.Q.-S.E.O.  
Station de Recherches, Agriculture Canada, 430 Boul. Gouin  
Saint-Jean sur Richelieu, Qué. Canada, J3B 3E6

Date limite: au plus tard le 30 juin 1991

Titre (maximum de 15 mots): \_\_\_\_\_

Auteur (s): \_\_\_\_\_

Organisme et adresse: \_\_\_\_\_

Présenté par: \_\_\_\_\_

Résumé (maximum de 50 mots):

Format de présentation (ne cocher qu'un choix):

Communication orale de 12 min. et de 3 min. de discussion

Présentation d'un Poster

Équipement audio-visuel: un projecteur Kodak pour diapositives de 35 mm et un rétroprojecteur seront disponibles à chaque session. Veuillez contacter le responsable du programme si vous avez besoin d'équipement additionnel.

JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA,  
THE ENTOMOLOGICAL SOCIETY OF QUEBEC AND  
THE ENTOMOLOGICAL SOCIETY OF ONTARIO

Montreal, 21-23 October 1991

**SUBMITTED PAPER AND POSTER PRESENTATION REPLY FORM**

Please return to: Dr. Charles Vincent,  
Joint Meeting 1991, E.S.C.-E.S.Q.-E.S.O.  
Agriculture Canada Research Station, 430 Boul. Gouin  
Saint-Jean sur Richelieu, Qué. Canada, J3B 3E6

**Deadline: Postmarked on or before June 30, 1991**

Title (not to exceed 15 words): \_\_\_\_\_

Author's Name(s): \_\_\_\_\_

Institution and Address: \_\_\_\_\_

To be presented by: \_\_\_\_\_

Abstract (not to exceed 50 words):

Form of presentation desired (check one):

Oral presentation of 12 minutes plus 3 minutes discussion

Poster presentation

Projection Equipment: A Kodak Carousel projector and an overhead projector will be available for each session. Slides should be provided in a carousel. Please contact the program chairman if equipment is required.

## MEMBERS IN THE NEWS

### Dr. Reginald E. Balch

Dr. Reginald E. Balch, an Honorary Member of the ECS, and the late Canon William E. Hart have been added to the Association of Registered Professional Foresters of New Brunswick Hall of Fame.

In presenting the award, Mr. Alex Dickson, chairman of the department of forest resources at the University of New Brunswick, said, "Reg Balch is recognised here for his contribution to the science and practice of forestry, his pioneer research on the biological problem of forest management, in particular the ecological basis of insect control in New Brunswick."

Dr. Balch was born 96 years ago in England and came to Canada at the age of 19 to become a cowboy. The closest he got to his dream was milking cows for \$10 a month, said Mr. Dickson.

In 1919, Dr. Balch entered Ontario Agricultural College, receiving a B.Sc. in agriculture, followed by a M.Sc. and Ph.D. in forestry from Syracuse University. In 1929, Dr. Balch moved to Fredericton and was appointed officer in charge of federal entomological research for the Maritime provinces. He later became director of the forest biology lab, a position he held until retirement.

The plaque honoring Dr. Balch reads:

*"Throughout his career as a research forester he maintained a strong interest in methods of forest management as a basis of protection from insects and diseases and an alternative to pesticides ... He developed biological methods to control the European spruce sawfly by introducing a number of parasites and a virus, a method described as the most successful and best documented project in forest history."*

### Dr. A. T. Finnamore

Dr. A. T. (Bert) Finnamore (B.Sc., M.Sc., Ph.D., [Macdonald College of McGill University]) has been appointed Adjunct Professor in the Department of Entomology, University of Alberta.

Dr. Finnamore is the Curator (Invertebrate Zoology) at the Provincial Museum of Alberta (12845 - 102 Avenue, Edmonton, T5N 0M6). Bert's primary interests are the systematics and biogeography of Aculeate Hymenoptera. His current projects include a revision of the world genera, a reconstruction of the phylogeny and biogeography of the tribe Stigmini (Hymenoptera: Apoidea: Pemphredonidae), preparation of keys to the families and subfamilies of the Chrysidoidea, Vespoidea and Apoidea of the world, and studies of the Bethyloidea and Scolioidea (Hymenoptera: Chrysidoidea, Vespoidea) of Costa Rica. He is also interested in the species diversity in Canadian habitats. On this subject he has projects on the arthropod fauna of a boreal mixed peatland, the aculeate Hymenoptera of the Yukon and of a grassland and a riparian habitat in southern Alberta.

As an Adjunct Professor, he is willing to co-supervise students working within the areas of his interests, as indicated above.



## IN MEMORY

### Kurt Depner

Dr. Kurt Rudolf Depner passed away in Sidney, British Columbia on March 8, 1991, at the age of 69 years. Kurt Depner was born in Hamborn, Germany and as a child he migrated to Canada with his parents in 1925. He grew up and got his early schooling in Alberta in the Wetaskiwin area.

Kurt Depner's scientific career began shortly after his separation from the Royal Canadian Air Force at the end of World War II. He enrolled at the University of Alberta in 1946 and graduated with a B.Sc. (Agric.) in 1950. After graduation he joined the Canada Department of Agriculture Livestock Insects Laboratory in Lethbridge, Alberta to investigate the biology and control of hornflies. He was the first to develop a

method of rearing hornflies on a year round basis under laboratory conditions.

In 1954 he enrolled in the Faculty of Graduate Studies, University of Alberta, and received the M.Sc. degree in entomology in 1956. He returned to the Canada Department of Agriculture Livestock Insects Laboratory, where he continued in his research program on the biology of hornflies with emphasis on diapause and winter survival.

In 1964, Kurt interrupted his research program at the then called Veterinary Medical Entomology Section of the Agriculture Canada Research Station, and enrolled at the Washington State University to continue graduate studies. In 1966, he received a Doctor of Philosophy degree in entomology. His main interest at this time was the effects of photoperiod on development and survival of mosquitoes and hornflies. He demonstrated that diapause in hornflies is induced in the off-spring when adult flies feed on the blood of ultra-violet irradiated hosts.

Kurt contributed significantly to the development of a control program for black flies in central Alberta. Results of these efforts make it possible to raise cattle in this region. Kurt published many scientific papers that are recognized internationally.

Kurt was predeceased by his wife Dagny in 1986. He is survived by one son and one daughter. Kurt was an early recipient of triple by-pass surgery in 1970 and was proud and positive about his "extra" 21 years due to scientific research and developments. Boats, motorhomes, reading, music and jigsaw puzzles were favorite past times. His presence among us will be sadly missed.

J. A. Shemanchuk  
Lethbridge, Alberta

## Gary A. Simmons (1944-1991)

Gary Simmons, Professor of Entomology at Michigan State University, died suddenly on January 24th 1991 in Lansing, Michigan at the age of 46. He was a former member of both the Acadian Entomological Society and the Entomological Society of Canada.

Dr. Simmons received a B.S. (1966) and M.S. (1968) from Michigan Technological University, and a Ph.D. (1972) from the University of Michigan. He was an Assistant Professor at the University of Maine before accepting the position of Forest Entomologist at Michigan State University in 1976. In 1978, he was promoted to Associate Professor and in 1984, to Full Professor.

While at MSU, Dr. Simmons and his students conducted research on a variety of insects such as spruce budworm, jack pine budworm, bronze birch borer, and gypsy moth. His research interests included survey and monitoring, modeling and economic decision-making, and integrated pest management.

Dr. Simmons is survived by his wife, Lynne, and five children. An educational trust fund has been established for his children (Simmons' Children Fund, Bank One, 4675 Okemos Road, Okemos, MI 48864).

## NEWS OF ORGANIZATIONS

### International Commission on Zoological Nomenclature

Applications published in the *Bulletin of Zoological Nomenclature*

The following applications were published on 26 March 1991 in Vol. 48, Part 1 of the *Bulletin of Zoological Nomenclature*. Comment or advice on these applications is invited for publication in the *Bulletin of Zoological Nomenclature* and should be sent to the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD.

#### Case 2742 *Vatellus* Aube, 1837 (Insecta, Coleoptera): proposed conservation

Anders N. Nilsson  
Department of Animal Ecology, University of Umea, S-901 87 Umea, Sweden

**Abstract.** The purpose of this application is the conservation of the name *Vatellus* Aube, 1837 for a genus of water diving beetle (Dytiscidae). It is threatened by *Leucorea* Laporte, 1835, an unused senior objective synonym of the Aube name.

Case 2763 *Coccinella undecimnotata* Schneider, [1792] (currently *Hippodamia (Semiadalia) undecimnotata*; Insecta, Coleoptera): proposed conservation of the specific name

Robert D. Pope  
c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K.

**Abstract.** The purpose of this application is to conserve the specific name of *Coccinella undecimnotata* Schneider, [1792]. The name is threatened by the hitherto unrecognized senior synonym *Coccinella oculata* Thunberg, 1781. The ladybird beetle *Coccinella undecimnotata* is a widespread southern European species that has been the object of considerable study outside the field of taxonomy and is one that plays a significant part in the natural control of aphid pests of various crops in the south and east of the continent.

Case 2748 *Plusia falcifera* Kirby, 1837 (currently *Anagrapha falcifera*; Insecta, Lepidoptera): proposed conservation of the specific name

J. Donald Lafontaine  
Biosystematics Research Centre, Agriculture Canada, Ottawa K1A 0C6  
Canada

Robert W. Poole  
Systematic Entomology Laboratory, U.S. Department of Agriculture, c/o  
National Museum of Natural History, NHB-167, Washington, D.C. 20560,  
U.S.A.

**Abstract.** The purpose of this application is the conservation of the specific name of *Anagrapha falcifera* (Kirby, 1837), a North American noctuid moth which is a pest commonly known as the celery looper. The unused name *Autographa norma* Hubner, [1821] is an undoubted senior synonym for this species, and we propose the suppression of Hubner's name *norma*.

Case 2799 *Simulium (Nevermannia) juxtacrenobium* (Insecta, Diptera): a proposal that availability of the specific name be taken from the intended original description by Bass & Brockhouse, 1990

Jon A. B. Bass  
Institute of Freshwater Ecology, Monkswood Experimental Station,  
Abbots Ripton, Huntingdon PE17 2LS, U.K.

Charles Brockhouse  
Department of Botany, University of Toronto, Toronto, Ontario,  
Canada M5S 1A1

**Abstract.** The purpose of this application is to ensure that the specific name of *Simulium (Nevermannia) juxtacrenobium* recently published for a new species of blackfly (Simuliidae), is treated as first made available by Bass & Brockhouse (1990), who described the morphology, cytology and habitat of the species, and who designated the holotype. Another paper, discussing the supernumerary chromosomes of this and related species, unexpectedly appeared first but to take this as the original publication would mean that the nominal species would neither be properly described nor have preserved type material.

Case 2614 *Vipio* Latreille, 1804 (Insecta, Hymenoptera): proposed designation of *Agathis longicauda* Boheman, 1853 as the type species

R. A. Wharton

Department of Entomology, Texas A & M University, College Station, Texas,  
77843 U.S.A.

W. R. M. Mason

Biosystematics Research Centre, Agriculture Canada, Research Branch,  
Ottawa, Ontario, K1A 0C6, Canada

**Abstract.** The purpose of this application is to designate *Agathis longicauda* Boheman, 1853 as the type species of the braconid genus *Vipio* Latreille, 1804, and so maintain the current usage of *Cremnops* Foerster, 1862 and *Vipio*. These genera are based respectively on *Ichneumon desertor* Linnaeus, 1758 and on a misidentification of Linnaeus's species by Fabricius.

The following Opinions were published on 26 March 1991 in Vol. 84, Part 1 of the *Bulletin of Zoological Nomenclature*.

Opinion 1626. *Corisa verticalis* Fieber, 1851 (currently *Trichocorixa verticalis*; Insecta, Heteroptera): specific name conserved.

Opinion 1627. *Saissetia* Deplanche, 1859 (Insecta, Homoptera): *Lecanium coffeae* Walker, 1852 designated as the type species.

Opinion 1628. *Castiarina* Gory & Laporte, 1837 (Insecta, Coleoptera): conserved.

Opinion 1629. *Helophorus brevipalpis* Bedel, 1881 (Insecta, Coleoptera): given precedence over *Helophorus creticus* Kiesenwetter, 1858.

Opinion 1630. *Helophorus obscurellus* Poppius, 1907 (Insecta, Coleoptera): given precedence over *Helophorus fausti* Kuwert, 1887.

Opinion 1631. *Ochthebius* Leach, 1815 (Insecta, Coleoptera): *Elophorus marinus* Paykull, 1798 designated as the type species.

Opinion 1632. *Exoprosopa* Macquart, 1840 (Insecta, Diptera): *Anthrax pandora* Fabricius, 1805 confirmed as the type species.

## PUBLICATIONS

### BOOK REVIEWS

Vane-Wright, R. I. and P. R. Ackery. (eds.). 1989. *The Biology of Butterflies*. Princeton University Press. 429 pp., 4 color pl. \$(U.S.)29.95.

In 1981, the Royal Entomological Society of London sponsored a symposium on "The Biology of Butterflies". Unfortunately, the promised symposium volume took 3 full years to appear, and although Academic Press did a good job of producing it when they got the manuscript, the book was relatively expensive. The now-affordable 1989 edition is published by Princeton University Press, and is different only in that it contains a survey and listing of new literature to 1987.

So why buy a book based on a symposium that was held an eternity ago, at least by biotechnology standards? Because it is still surprisingly useful. Of the 33 papers it contains, 15 are lengthy reviews of various aspects of butterfly biology, and many of these reviews remain the best yet produced in their field. Perhaps more importantly, the authors of this volume were as concerned with the future as with the past, and their visions have continued to shape the directions of research on whole organism biology. *The Biology of Butterflies* remains a highly usable collection of the views and databases that have strongly influenced biology in general.

This book is primarily about the ecology and behavior of butterflies, with studies on butterfly and plant chemistry interpreted in that context. Papers are arranged by subject matter, with longer works interspersed with more specific, shorter contributions. Ackery leads with an overview of faunal studies and family/subfamily relationships, and his is the only review paper dealing with systematics. The remaining papers are divided into seven parts, entitled: populations and communities; the food of butterflies; predation, parasitization and defense; genetic variation and speciation; sex and communication; migration and seasonal variation; and conservation. Some of the highlights include reviews by F. S. Chew and R. K. Robbins on oviposition, by L. P. Brower on chemical defenses, and by R. E. Silberglied on visual communication. The symposium and book were dedicated to E. B. Ford, and many of the contributions show the breadth of his influence. A special point of interest is L. E. Gilbert's review of butterfly communities, which describes E. Munroe's independent formulation of island biogeography.

This volume has some curious gaps. Flourishing research programs in butterfly physiology, biochemistry, and development, many in Japan, are scarcely dealt with. These fields have still not been effectively integrated into the rest of butterfly biology, though major strides are being made in studies of chemical stimulants of oviposition. Exciting new insights into flight and thermoregulation came too recently to make it into the book. More telling is the lack of substantive coverage of speciation and the conceptual side of systematics. *The Biology of Butterflies* represents a period in the study of butterflies during which the impact of ecology and population genetics were at their peak, and that of systematics was at a low point. This gap is beginning to be filled in, to a large extent by Vane-Wright and Ackery themselves. Ecologists and geneticists are now also rediscovering the value of phylogenetic frameworks and molecular systematic studies of butterflies are gathering momentum in a number of laboratories.

Meanwhile, *The Biology of Butterflies* remains a valuable addition to the bookshelf of anyone even remotely interested in butterflies. Ecologists, behaviorists and population geneticists will find it a very useful entree into the wealth of biological information for butterflies.

Felix Sperling  
Cornell University  
Ithaca, New York



Hillis, D. M. and C. Moritz. (eds.). 1990. *Molecular Systematics*. Sinauer, Sunderland, MA. xvi, 588 pp., illus. \$(U.S.)65.00 cloth; \$(U.S.)37.95, comb.

Over the past decade a revolution in biosystematics has been taking place. Techniques of molecular genetics are being applied at an increasing rate in systematic studies and the array of potentially useful molecular approaches is expanding. It is therefore timely that such a book as this has come along. This work serves as a compendium of theory and practical approaches, useful in both the library and the laboratory. The book has been carefully written and edited. The chapters are balanced, well-illustrated and, in general, uniform in scope. The editors employ a broad definition of the topic and include studies of diversity both within and among species, thus recognizing a common ground; in the past, intraspecific processes and patterns have been traditionally considered as the domain of the population geneticist.

In the first chapter, the editors provide an historical perspective and an overview of the basic issues. The following ten chapters are organized according to the three main phases of a molecular systematics study, namely, the design, application and analysis stages of a project.

The section on sampling consists of chapters on sample design (Baverstock and Moritz) and on the collection and storage of tissues (Dessauer, Cole and Hafner). The application section consists of six chapters which cover the main technical approaches in molecular systematics: isozyme electrophoresis (Murphy, Sites Jr., Buth and Haufler), immunology (Maxson and Maxson), cytogenetics (Sessions) and DNA-DNA hybridization (Werman, Springer and Britten), restriction site analysis (Dowling, Moritz and Palmer) and sequencing (Hillis, Larson, Davis and Zimmer) of nucleic acids. Each of these chapters is uniformly organized within to cover the topics of (1) basic principles and assumptions, (2) methods and limitations, (3) laboratory equipment, (4) laboratory protocols and (5) interpretation and problems. This structure allows the user to compare methods and to develop a complete plan for a molecular systematics project.

The data analysis stage is dealt with in two parts, one chapter on intraspecific differences (Weir) and one on phylogeny reconstruction (Swofford and Olsen). The latter is particularly well-written, it describes what the various phylogeny estimation methods actually do, and ends with an all-important section on the available computer software. The editors close with an overview chapter on applications and discuss the future of molecular systematics. An extremely valuable glossary of terms is provided.

This book does not deal with molecular evolution, the understanding of the reasons for patterns of molecular diversity and the functional aspects of this molecular diversity. As the amount of data being generated by the new molecular technologies increases, particularly with the increased use of oligonucleotide synthesizers and polymerase chain reaction (PCR) amplification machines, the theory will fall further behind. Increased development of methods of analysis will be needed. An understanding of molecular function will be necessary for the correct phylogenetic interpretation of molecular data.

This book is the best of its kind for biologists who need an overview of the current state of molecular systematics. It is also useful guide for practitioners needing a reference to techniques and details of protocols. This book will be widely used and, one hopes, frequently revised, as molecular systematics continues to grow.

Robert G. Footitt  
Biosystematics Research Centre  
Ottawa, Ontario

Weir, B. S. 1990. *Genetic Data Analysis*. Sinauer Associates. 377 pp. \$(U.S.)27.00.

The tools of population genetics and molecular data analysis are now indispensable to anyone doing research on natural populations or relationships among organisms. *Genetic Data Analysis* does an excellent job of making these tools available. It is a reference book to methods for statistical analysis of discrete genetic data. It does not deal with quantitative genetic data resulting from continuously

distributed traits. A prior background in population genetics will be very helpful for those consulting this volume.

After an introduction on types of genetic data, Weir takes up almost two thirds of the book with the classic problems of population genetics. This section is well organized and concise to the point of terseness. The chapter on frequency estimation includes discussion of maximum likelihood and the method of moments. The following chapters provide an equally thorough coverage of analyses of associations among genes, genetic variation, population structure, and processes affecting genetic transmission. This section of the book is long on algebra and short on English. However, some well chosen examples and references to the primary literature help to make the methods accessible, and several of the most pertinent methods are included as programs at the back of the book. Each chapter ends with a brief summary and a small number of exercises.

The last two chapters in the book deal with phylogeny reconstruction and the special problems associated with restriction site and sequence data. These are rapidly growing fields, and Weir provides more of a sampling than a survey. For example, he does not provide methods for estimation of genetic distances from restriction site differences, though his discussion of sequence comparisons is more complete. Parsimony methods for phylogeny reconstruction receive a very brief and critical treatment, compared to distance and likelihood methods, in spite of the increased use that parsimony methods are receiving by molecular biologists. To use this part of Weir's book most effectively, it will help to consult *Molecular Data Analysis*, D. M. Hillis and C. Moritz, eds. 1990. Sinauer Associates. The chapter on molecular phylogeny reconstruction by D. L. Swofford and G. J. Olsen has a more extensive discussion of parsimony methods and complements Weir's book nicely.

Three appendices contain statistical tables, descriptions of random number algorithms, and source code listings for computer programs. The latter should be especially useful, since the programs look fairly straightforward and apparently run on microcomputers. They include 55 pages of FORTRAN/77 programs for calculations of linkage disequilibrium, F-statistics, and sequence manipulations. The source code for F-statistics programs is also published in Weir's chapter in Hillis and Moritz (1990, above).

*Genetic Data Analysis* is destined to become a well-thumbed volume residing beside the terminals of researchers using discrete phenotypic data, allozymes, restriction sites, and DNA or protein sequences. It will also serve well as a supplementary text in courses on population genetics and systematics.

Felix Sperling  
Cornell University  
Ithaca, New York

**Vickery, V. R. 1990. *The Honey Bee: A Guide for Beekeepers*. Particle Press, Westmount, Quebec. 240 pp. \$29.95.**

*The Honey Bee: A Guide for Beekeepers* is a comprehensive reference for practical apiculture in Canada and Northern U.S.A. Written as an expansion of Vickery's Macdonald College apiculture course outlines, it is well organized, concise and readable.

The book is organized into 16 chapters. Early chapters briefly outline apiculture history and provide a conventional introduction to honey bee phylogeny, anatomy, physiology, social structure and communication. Later chapters deal with more applied aspects such as equipment, apiary location and management, pollination, extraction, characteristics of honey and secondary products, winter management, diseases and parasites, the African bee problem, and production economics. The final chapter includes a seasonal schedule, a modest glossary and a useful bibliography of apiculture publications; individual chapters also have subject-specific reference lists. Photocopyable forms for financial accounting, colony production records, colony condition, and equipment inventory are also included. The index contains around 400 entries, adequate but certainly not as exhaustive as *The Hive and the*

*Honeybee* which has about 3000. The inclusion of a well organized detailed table of contents, in addition to the general one, enhances information accessibility.

Academic specialists may find the book's depth lacking and Vickery's sometimes anecdotal style to be cloying; however, this approachability will likely make the book attractive to students and practising beekeepers. I found the editing to be a bit uneven; problems included inconsistent capitalization, irregular word and letter spacing, and some instances of misspelled words (example 'medecine' for 'medicine'). In addition, my advance copy had numerous ink spatters and fingerprints.

The strong coverage of winter management and packing, as well as the more Canadian approach to the discipline, makes this book more relevant to beekeepers in Canada and the northern U.S.A. than most existing standard texts. Coverage of contemporary subjects such as chemical residues in honey, africanized bees, and the American honey buyback program are up to date. (Incidentally, there is no treatment of the Canadian Tripartite Stabilization Program.)

Vickery is best known for his published work on Orthopteran taxonomy. In this book he has skillfully combined the scientific precision of a professional entomologist with the practical wisdom gained through three decades of hands-on apicultural experience. This will enable a broader group of students, researchers, and beekeepers to benefit from his venerable knowledge. Teachers of apiculture courses should consider this volume as an alternative to their current texts.

Keith Moore  
Research Station  
Saskatoon, Sask.

**Barjac, H. de, and D. J. Sutherland (eds.). 1990. *Bacterial control of mosquitoes & black flies: Biochemistry, genetics & application of Bacillus thuringiensis israelensis and Bacillus sphaericus*. Rutgers University Press. New Brunswick, N.J. USA. 349 pp. Hard cover \$(US)48.00.**

This multi-authored book reviews the history, morphology, genetics and biochemistry of the toxins, formulations, applications and safety of two bacterial control agents. *Bacillus thuringiensis israelensis* (*B.t.i.*) is used against both mosquitoes (Culicidae) and black flies (Simuliidae) while *B. sphaericus* is only efficacious against certain mosquitoes, for example *Culex* and *Anopheles*, with most *Aedes* spp being relatively insensitive to it. Since the discovery of *B.t.i.* in 1977, and its subsequently proven efficacy for controlling the above vector and pest species, an enormous amount of research has been published. This in turn stimulated a further examination of *B. sphaericus*. This mosquito pathogen was discovered in the early 1960's but initial isolates had a relatively low efficacy. The renewed research found more efficacious strains, and subsequently the mechanisms of pathology, genetics, production, safety and use were worked out. These world wide research activities in diverse disciplines were brought together in a symposium held in 1985 at the Fifty-first Annual Meeting of the American Mosquito Control Association in Atlantic City, New Jersey. After the symposium, 37 authors from around the world produced the 22 papers published here. These are divided into three parts in the book, chapters 1-12 on *B.t.i.*, chapters 13-21 on *B. sphaericus* and chapter 22 on the future of bacterial control.

In the *B.t.i.* part, two short chapters deal with the discovery and characterization, two chapters cover the nature of the parasporal body, its protein composition, toxicity and mode of action. This is followed by three chapters on the genetics of the bacteria with regard to the production of these protein toxins, cloning of the genes and possible manipulations of these genes. A longer chapter follows on formulation and bioassay, pointing out the care required to obtain good standard reproducible assays with biological agents, and potential improvements to formulations. One lengthy chapter deals with use against mosquitoes and is followed by two on its use against black flies, one in temperate areas and the other in the onchocerciasis control program in west Africa. The final *B.t.i.* chapter deals with mammalian safety.

In part 2 on *B. sphaericus* there are two short chapters on history, classification and an overview of strains and strain differences. The next chapter deals with the mosquito toxin and is followed by a chapter on genetics of *B. sphaericus*. One chapter deals with the possibility of production in developing countries if this agent becomes an important tool in control of malarial vectors in these countries. Two chapters deal with persistence and formulations. The first more generally and the second with regard to control of *Culex quinquefasciatus* in tropical Africa. A third chapter deals specifically with field trials against several mosquito species around the world. This part concludes with a chapter on mammalian safety. Part 3 is the final chapter overview of the future of all bacterial control methods for these two blood-feeding families.

This book reviews a large diversity of research published in a wide array of scientific and technical journals, providing a good reference work on these bacterial control agents. Most chapters have included literature references up to 1989 although a few are not as current. There is some unnecessary duplication in the introductions of some chapters, which could have been eliminated by a stronger editorial hand, but this a minor problem overall. The strength of the book is to provide a good explanation of the basic nature of these two bacteria, the type of toxins produced, their mode of action and the genetics, strain isolation and development of usable formulations for practical safe field use against these two families of biting flies. Although the book reviews the field use of these two bacteria, the information needed to set up and operate a control program is beyond the scope of this book.

Anyone with some technical training will be able to obtain basic background information on these agents, allowing them to understand the nature of the bacteria, their modes of action, safety and use. Thus the book will be very useful to researchers interested in biocontrol, as well as pesticide regulators and biting fly control program managers. It will also be a useful reference for university students taking applied biology, economic entomology, and pest control courses as it indicates the diversity of approaches needed to develop microbial control agents for pest control. I found it, for the most part, easy to read and I gained a much broader understanding of these two bacterial species from doing so. The price is very reasonable for a hard cover book in this field.

Murray H. Colbo  
Memorial University  
St. John's Nfld.

**Hill, D. S. 1990. *Pests of Stored Products and their Control*. Belhaven Press, London. 274 pp. Hardcover, £42, ISBN: 1 85293 052 7.**

Dr. Hill's goal in this book is an ambitious one - to outline the pests of stored products and the method of their control throughout the world. He considers a wide variety of stored products: Plant materials - cereals, pulses, nuts, dried fruits, oil seeds, and spices; Animal materials - meats, fish, molluscs and hides; Building and packing materials - bamboo, sacking and wooden timbers. However he deals mainly with stored cereals, as this is the produce that is stored in the greatest quantities. His discussion focuses on insects, but also he examines mites, rodents, birds, and snails. He does not cover moulds, bacteria or their toxic byproducts.

The first four chapters introduce the reader to the storage environment and pest problems. Storage is divided into initial processing, transport, storage, final processing and consumption. The types of produce, their associated pests and the damage caused is described. The author draws on his experience in Asia, Africa and England to describe the wide variety of storage structures available throughout the world.

The bulk of the book, 160 pages, is an extensive list of the pests found damaging stored products. For each pest there is a description of the produce it feeds on, type of damage it causes, life history, geographical distribution and natural enemies. For the major pests and the damage they cause, there are line drawings or photographs. As there is no key, readers must already know what pest they have before they can use the information in this section. The line drawings are sometimes unsatisfactory, and would make identification difficult.

The final section of the book deals with methods to control stored-product pests. The author emphasizes that the basis for good control is knowledge of the number and type of pests present, the physical parameters in the produce and the different methods of control available. He covers briefly heat treatments, cold treatments, modified atmospheres, biological control and mass trapping as control methods. An appendix of the pesticides currently used on stored products gives the chemical name, commercial name, properties, uses, toxicity to man, fish and mammals, and formulations.

This text gives a good overview of stored product pests found around the world and would be a suitable introduction for the non-specialist. Experts in the field will find the comprehensive list of pests and the appendix on pesticides a convenient reference.

P. G. Fields  
Winnipeg, Manitoba

**Hector, D. J. and I. D. Hodkinson. 1989. *Stickiness in Cotton*. ICAC Review Articles on Cotton Production Research No. 2. C. A. B. International, Wallingford, Oxon OX10 8DE, UK. 43 pp. \$(U.S.)26.25.**

In spite of the title, which brings to mind problems such as the "static-cling" of television commercials, this is a useful publication of interest to entomologists, particularly those working with Homoptera. The term "stickiness in cotton" refers to the problem of concern to the cotton industry, where contaminants in the cotton interfere with production. These contaminants often are sticky deposits produced by the cotton plant or are honeydew, the sugar-containing excretory products of feeding insects.

This paper presents a comprehensive review of the topic of stickiness in cotton, including the industrial importance and occurrence of the problem, methods of testing for it and solutions to the problem at the milling stage of production. The authors then review the relevant biology of the honeydew-producing insects, of which the prime sources of contamination in cotton are the aphids (Aphididae) and whiteflies (Aleyrodidae). Also reviewed are the host plant characteristics which influence the incidence of attack by these insects and various control strategies.

To the textile industry, stickiness is an important problem, affecting production, exports of raw cotton and products and resulting in major economic losses. This review brings together a diffuse literature, previously found chiefly in obscure field reports and specialized technical bulletins.

At a cost of \$26.25 (U. S.) for 43 pages and soft covers, this publication is overpriced!

Robert G. Footitt  
Biosystematics Research Centre  
Ottawa, Ontario

**Ridgway, R.L., R.M. Silverstein and M.N. Inscoe (eds). 1990. *Behavior-modifying chemicals for insect management: Application of pheromones and other attractants*. Marcel Dekker, Inc., New York. 761 pp. Hard cover. \$(U.S.)195.00 (U.S.A. and Canada); \$(U.S.)234.00 (all other countries)**

Semiochemicals have not lived up to expectation as a means of controlling insect pests. Statements of this nature are often found in the literature but occur in two rather different contexts. The first reflects a pessimistic view that the potential of semiochemicals as a management tool is limited. The second, while recognising present shortcomings, is one of optimism in that it is accompanied by suggestions for improving the efficacy of semiochemicals. As Silverstein, one of the editors, indicates

in his introduction the very existence of this "the glass is half empty - the glass is half full" dichotomy was the "raison d'être" for the international symposium that gave rise to this book. Its objective was to assess the state of the art with respect to the practical use of behaviour-modifying chemicals and to consider their future use in the management of insect pests. Silverstein concludes his overview of the situation by stating that "... the authors will persuade most of us that the glass is half full". Having read this book I fail to see how the reader can go away with any other conclusion.

The reader is provided with the basic principles pertaining to the use of semiochemicals for monitoring, mass trapping, and mating disruption, as well as the steps employed in pheromone identification and the development of dispensers for the controlled release of semiochemicals. These chapters provide the background information for the specific examples that follow. The case histories presented cover an array of lepidopteran, dipteran and coleopteran pests occurring in a wide diversity of ecosystems: peach and apple orchards, rice paddies, vineyards, cotton fields, coniferous and deciduous forests, tropical savannahs and storage facilities. Furthermore, certain authors provide a detailed description of each facet involved in the elaboration of the specific programme, while others limit their descriptions to the operating system currently in use. These different approaches offer a nice balance. The detailed examples give a realistic idea of the experiments associated with the many different steps involved in the development of a workable programme, clearly underlining the labour-intensive research effort required in the selection of the optimal pheromone blend and release rate, the release system, the trap design and placement, etc. The more concise descriptions of many functional programmes provide insight into how each was tailored to meet the constraints imposed by peculiarities such as voltinism, migration, habitat structure (both habitat size and the presence of alternate hosts) or climatic effects on the performance of a given pheromone blend.

This book has three additional attributes. The first is a number of presentations from industry, in which aspects relating to the different facets of commercial development (production costs, marketing opportunities, etc.) are discussed and the essential need for a continuous collaboration between industry and researchers in both industry and government laboratories, to facilitate technology transfer, is underscored. The second is a discussion of registration of semiochemicals for commercial use. The process in the United States is described in detail, with specific examples, and the present situation in Europe and a number of other countries is described in general terms. The suggestion is made that a uniform set of international guidelines, based on those elaborated in the United States, be adopted. Finally the reader is provided with tables providing very practical information: two lists (taxonomic and alphabetic) of arthropods for which semiochemicals are commercially available; a partial list of commercial suppliers throughout the world; a list of common and scientific names of arthropods used by commercial suppliers; and two tables showing the manner in which different semiochemicals are used for different Orders in different commodities. In all cases the information provided pertains to the situation in 1988.

In brief, this book should serve as an important reference for all persons interested in both the basic and applied aspects of semiochemicals. The price is the only "the glass is half empty" aspect of this book, for at \$200 the volume will not be accessible to many potential users. However, its scientific value makes it an essential addition to all institutional libraries.

J. N. McNeil  
Université Laval  
Québec

# SCHOLARSHIPS AND GRANTS / BOURSES D'ÉTUDES ET SUBVENTIONS

## International Society of ARBORICULTURE Grants for Shade Tree Research and Educational Projects

Each year since 1975, the International Society of Arboriculture has awarded grants to encourage scientific and educational research on shade trees. Horticulturists, plant pathologists, entomologists, soil specialists and others are invited to submit brief outlines of proposed projects where a grant might help buy supplies or equipment, hire technical or student help, or otherwise aid the work. For the last four years (1988 through 1991) 10 grants (@\$2000) have been awarded per year. The number and size of 1992 grants has not yet been decided.

Individuals self-supported or privately or publicly employed are eligible. There is no restriction by religion, race, sex, age, nationality or residence of applicant. The grants are not expected to cover all research costs but to aid, stimulate and encourage scientific studies of shade trees. ISA requires that administrative overhead **NOT** be deducted from grants it awards. Recipients will be asked to publish their results in ISA's "Journal of Arboriculture".

The candidate should send **no more than 2 pages** (in English) outlining:

- (1) Name, address and telephone number of **one** Principal Investigator
  - (2) Institution(s) and date(s) of Investigator's college and/or graduate degree(s)
  - (3) Title of project
  - (4) Purpose of project
  - (5) Research plan
  - (6) Intended use of grant money
  - (7) Names of other individuals involved in the research
  - (8) Citations to 2 relevant publications by the researcher (Do not send reprints)
  - (9) Importance of Research: How will your results help every arborist do daily tree-care work?
  - (10) Cost of the **entire\*** project
  - (11) Duration of the **entire\*** project
- \* whether or not an ISA grant is awarded

To be considered **proposals must arrive by December 1st 1991**. Proposals received after December 1st are considered one year later.

For more information write to:

Dr. Francis W. Holmes  
Chair of ISA Research Committee  
24 Berkshire Terrace  
Amherst, MA 01002-1302

Tel. 413-549-1226

## UPCOMING MEETINGS / RÉUNIONS À VENIR

### **Symposium on Ectoparasites of Pets**

June 17 - June 19, 1991

Lexington, KY

CONTACT: Fred W. Knapp, Dept. of Entomology, S225 Agricultural Science Center North, Lexington, Kentucky. 40546-0091. Tel. (606) 257-7453.

### **35th Annual Livestock Insect Worker's Conference**

July 8 - July 11, 1991

Jackson, WY

CONTACT: Jack Lloyd, Box 3354, University Station, Laramie, WY 82701. Tel. (307) 766-2234.

### ***Bacillus thuringiensis* '91**

July 28 - July 31, 1991

CONTACT: Philip F. Entwistle, Institute of Virology and Environmental Microbiology, NERC, Mansfield Road, Oxford, UK. OX1 3SR.

### **24th Annual Meeting of the Society for Invertebrate Pathology**

August 4 - August 9, 1991

Northern Arizona University, Flagstaff, AZ.

CONTACT: Elizabeth Davidson, Dept. of Zoology, Arizona State University, Tempe, AZ. Tel. (602) 965-7560.

### **74th Annual Meeting of the Florida Entomological Society**

August 4 - August 7, 1991

Ritz Carlton Hotel, Naples, Florida

CONTACT: David Williams Tel. (904) 374-5982.

### **47th Annual Meeting of the Entomological Society of Manitoba**

November 7 - 8, 1991

The Freshwater Institute, Winnipeg, Manitoba

In addition to the paper and poster sessions, the Scientific Programs will include a symposium of special interest: "Pest Management: Are There Any Alternatives?" The theme speaker will be Dr. Gordon Surgeoner of the University of Guelph. Symposium speakers will include: Ms. JoAnne Buth, Manitoba Agriculture; Dr. Bob Lamb, Agriculture Canada; Dr. Sandy Smith, University of Toronto; Mr. Ernest Dankwa, Abbott Laboratories; and Dr. Michael Weiss, North Dakota State University.

CONTACT: Mr. R. M. Gadawski, Chair, ESM Scientific Program Committee, 2799 Roblin Blvd., Winnipeg, MB, R3R 0B8. Tel. (204) 986-3794, Fax: (204) 832-7134.

### **XIX International Congress of Entomology**

June 28 - July 4, 1992

Beijing, China

CONTACT: Prof. Z.L. Zhang, Secretary-General, XIX International Congress of Entomology, 19 Zhongguancun Lu, Beijing 100080, China. Tel. (861) 256-3011; Fax. (861) 256-5689; Telex 222337 ICCST CN



## **VII International Conference on Ephemeroptera**

August 3 - August 6, 1992

Orono, Maine

CONTACT: K. Elizabeth Gibbs, Department of Entomology, University of Maine, Orono, Maine 04469

## **Joint Meeting of the Entomological Societies of Canada and Saskatchewan**

September 27-30, 1992

Saskatoon, Saskatchewan - FIRST NOTICE

CONTACT: Dr. P. G. Mason, Agriculture Canada, Research Station, 107 Science Crescent, Saskatoon, Saskatchewan S7N 0X2. Tel: (306) 975-7014, Fax: (306) 242-1839.

## **MISCELLANEOUS**

### **Announcement - Royal British Columbia Museum**

Royal British Columbia Museum  
675 Belleville Street  
Victoria, B.C.  
V8V 1X4

During 1991 and 1992 we will be packing and moving our anthropological, biological and historical collections to allow for removal of asbestos in our collections building. During this time some of our artifacts and specimens will be inaccessible.

We will meet all our existing commitments regarding loans and research access and will endeavour to meet any additional requests.

Our exhibits building will remain open to the public.

Loans and research contact: Grant W. Hughes  
Assistant Director  
Collection Program  
(604) 387-5706

For further details contact: Tom Palfrey  
Promotions Coordinator  
(604) 387-2134

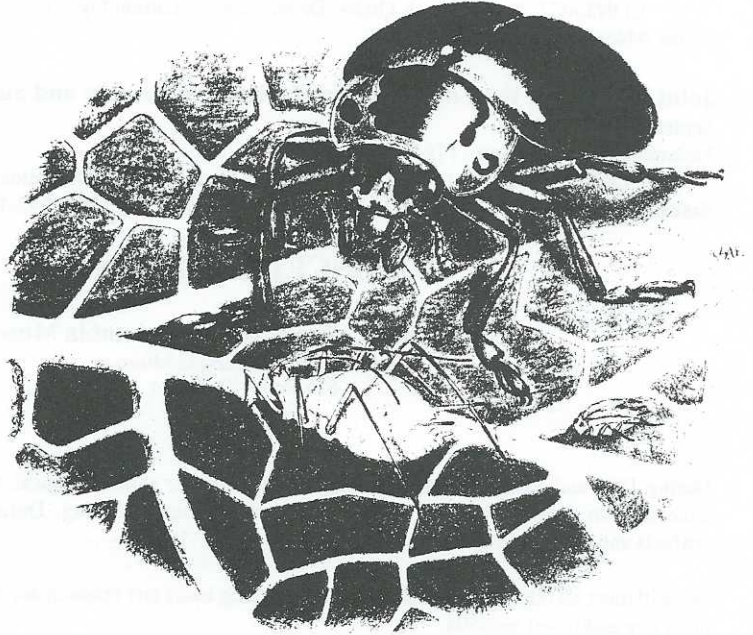
### **Laboratory Cultures of Insects and Other Arthropods in Canada**

The 1989 revision of this list was prepared but not issued. It is now available and will be sent to anyone requesting it. The 1991 revision is almost complete. For more information, please contact: J.S. Kelleher, Biosystematics Research Centre, B159 K.W. Neatby Building, Ottawa, K1A 0C6. Tel. (613) 996-1665; Fax (613) 995-1823

**The Entomological Society of Manitoba  
announces  
... the sale of T-shirts and sweatshirts**

Due to the popularity of our T-shirts locally, we have decided to expand our 5-coloured design to other entomological societies.

Our design features a predatory coccinellid and 2 unsuspecting aphids. The beetle has a red elytra with black dots, and a black and beige pronotum. The aphids are green. The design has a grey leaf-like background.



T-SHIRTS	\$14.50	adult sizes: S, M, L, XL colours: white or yellow (50% cotton/50%polyester) (100% cotton - add \$2.00) youth sizes: S, M, L
	\$10.50	
SWEATSHIRTS	\$24.00	sizes: S, M, L, XL colours: white only

Please include \$5.00 for shipping and handling charges.  
If interested, please call or contact:

Don Dixon  
Manitoba Agriculture  
911-401 York Avenue  
Winnipeg, Manitoba  
R3C 0P8  
Tel. (204) 945-3861

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

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