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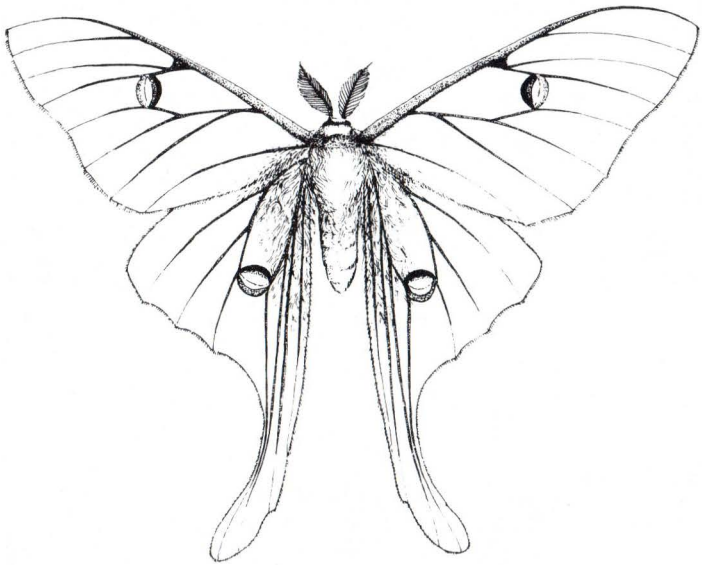
BULLETIN



ENTOMOLOGICAL SOCIETY OF CANADA
LA SOCIÉTÉ D'ENTOMOLOGIE DU CANADA

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BULLETIN

VOL 21 (2) - June/juin, 1989

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EDITORIAL

Shoulders of Giants - Backs of Dwarves

The juxtaposition of two recent events lead me to think about scientific extremes. One was that Konrad Lorenz had passed away at the age of 85. The other was that the continuing controversy over the ideas of Philip Rushton was still a hot topic.

Lorenz' death had particular poignancy for me because it was my reading of Lorenz' books in the mid- and late 60's that pushed me toward the study of animal behaviour. I met Lorenz once 1969 while studying ethology at the University of Maryland. Lorenz had been the mentor of a professor of mine - Wolfgang Schleidt - and had stopped by on a speaking tour of the United States to see his former student. The visit coincided with our March break and (luckily as it turned out) there were few students around to meet him. A few students were invited to Schleidt's home to meet Lorenz and talk about animals and how they behave. I attended this gathering expecting to spend my time sitting quietly in awe at the feet of the great man gathering what scraps of wisdom fell from the conversation. I was wrong. I saw a kind, unassuming man who truly loved the animals he studied and was only too willing to share this affection with any who would listen - even lowly undergraduate non-entities.

Lorenz took the study of animal behaviour and infused it with new life with a liberal dose of evolutionary theory. It is largely for this approach that he is considered the father of ethology. Lorenz' rise to such prominence was interesting for he had, in the 1930's, embraced for a time the ideas - especially those of racial improvement - of the leaders of Nazi Germany. Lorenz later renounced these ideas but the stigma of his past involvement with that particularly unsavoury group of people remained.

The juxtapostion with the Rushton controversy was ironic. Rushton, a psychology professor at the University of Western Ontario, has recently put forth the results of his research into racial difference and maintains that according to a number of different criteria the races can be ranked in descending order from Orientals to Caucasians to Blacks. For his ideas, Rushton has been labelled a Neo-Nazi and a racist. I don't know if Rushton is a racist and, frankly, don't much care. What I do care about is that his science appears to be very bad.

Anyone with a functioning visual system can tell that there are differences between the races. Rushton has attempted to take this several steps further by measuring such features as intelligence, tendency to criminality, affection, brain size, size of genitalia etc. to push his ideas of racial ranking. My own reading of his research is that his understanding of evolution and genetics is so poor and misguided that any conclusions are worthless. His 'experimental' procedure is also suspect. I eagerly (?) await an objective way of measuring affection for example or any empirical verification of the notion that brain size is in any way correlated with intelligence. His proposition that he can show that criminality is 50% heritable is ludicrous. In traits that we can objectively quantify (e.g. height, hair colour etc.), heritablilty measures the proportion of the variance in trait that is attributable to genetic and environmental factors not that a trait is 50% determined by one or the other.

What does this mean for entomologists? As entomologists, probably little but as scientists - a great deal. If we are to play any role in the direction and improvement of the human condition then our work and its results must be, if nothing else, of high quality. We must actively refute - on scientific grounds - work such as Rushton's that appears to be simply incompetent. I hope that Lorenz's refutation of the ideas of measurable racial superiority was based in a great measure on a recognition that it was bad work.

R. Aiken,
Mount Allison University

LETTERS TO THE EDITOR/ LETTRES À L'ÉDITEUR

(Ed. Note: The following letter was sent to Doug Eidt and then, on Doug's suggestion, to me)

Dear Doug,

I read with interest the information on the amalgamation of BCC and CFBS. I am in strong agreement for the need for a biological umbrella group in Canada that includes as many Societies as possible. From reading the documents and the proposed budget, I have the same concerns about CFBS as I have had about BCC. Lobbying and otherwise informing elected officials is a useless undertaking. It will continue to be useless until the science policy of political candidates has significant impact on the outcome of elections.

The CFBS does propose activities directed to the public in the form of lectures and information databases but those methods assume that the public and media are very eager to get information from us. They are not. The media want newsworthy stories which then generate the information for more information. We must accept that most information garnered by the public comes from the tube. Lofty, rational lectures, news releases and pleading to government will continue to be ignored because we have little grass roots support.

Environmental issues and the stances of candidates to them are just beginning to affect election results. Environmental groups have been successful explaining to the public, aided by PCB fires, ALAR residues, sewage on beaches etc., what environmental problems are and how they can be averted. Scientists have played only a minute role in getting the critical information before the public. We tend to debate for years until we are sure of the results then move on to the next subject. We neglect to inform the public what they got for their money when we ask them to pay the bills!

Paying someone to pay for an MP's lunch, as seemed to be the main approach by the BCC in the past, obviously had no impact on policy. The key target must be the public and the media if we expect to have any changes in government funding policies. The new CFBS budget included $64,000 for consultants who I assume will continue to buy lunches but now at a new inflated price of $30 per member. I am opposed to joining CFBS to continue to support the stroking of the people who have done nothing for us.

I would heartily agree to hiring a person who could "market or advertise" the role of science and scientists in society. The job is one for a professional who knows how to package stories that capture the public mind. The packaging may annoy scientists who have the knowledge of the minutiae - too bad. If we don't directly impinge on the media then we are letting others far less qualified tell our stories and give our information for their purpose and not ours. There is an information gap that is eagerly filled by people who are poorly informed simply because they can get a strong 20 sec. story on TV. Scientists are usually hopeless at that task and David Suzuki cannot do it for us.

In summary, I agree with the need for the ESC to belong to an umbrella society but only if a member achieves something other than filling the umbrella with our money. The task that I think is most needed is to publicize the role of scientists. The problems resulting from only the commercial use of science are screaming at us daily from the media. The timing is perfect to advertise our true role in society and to humanize the public's view of scientists. But like getting elected, it takes professional handlers.

Bryan Frazer, Research Scientist
Agriculture Canada Research Station
6660 N.W. Marine Dr.
Vancouver, B.C. V6T 1X2

(Ed. Note: the first paragraph of the following letter has been omitted)

Dear Dr. Aiken,

.....On another matter, i.e. your editorial of the March 1989 issue. I would like to comment. Although I would be prepared to say that we are indeed faced with a deterioration in the preparation of students coming to university in various fields (whether they are French- or English-speaking), I must also point out that we do have, from time to time, some exceptional groups. For instance, this year in my course "Pesticides and the Environment", I have an excellent group of students who have written the best essays I have seen in years (I have been teaching this course since 1971). Simultaneously, in the other course (seminar format) which I teach "Science, Technology and Development", I also got a very good group of students (with a totally different background) who give me reasons for hope. So do not despair.

Bernard J.R. Philogène, Dean
Faculty of Science
University of Ottawa

Dear Dr. Aiken,

Your editorial in the March 1989 issue of Bull. Ent. Soc. Canada is most pertinent. I have distributed copies.

However, there is another explanation that, I think, applies to at least some degree. I agree that the hub of the question is that students entering universities are less well prepared than they once were. But is it that the overall level of high school preparation has fallen or is it merely that more high school students from the lower half of the distribution curve are now entering college? I suspect it is the lowering of standards for admission to college that is causing college faculty to be confronted with a higher percentage of students needing remedial work in their first couple of years.

Bryant Mathus
213 Mt. Salus Rd.,
Clinton, MS
U.S.A. 39056

Sir:

I was pleased to receive three letters of reaction to my March "President's Update". One is published in this issue. The information and opinions in the others are also important.

One writes: "..you discuss about about to be published, *The butterflies of Manitoba*, and state that 'It will be only one of two first class region butterfly books in Canada, the other being Ray Morris' *Butterflies and moths of Newfoundland.*'

I just wanted to make you aware of the *Butterflies of Saskatchewan - A field guide* by Ronald R. Hooper and published byt the Museum of Natural History in Regina. This is a comprehensive account of all known Sask. butterflies as of its date of publication (1973). Ron Hooper is an amateur entomologist, who now works part-time in the Museum. He is, without a doubt, the most knowledge-

able insect taxonomist in the province. His field guide includes information on Sask. life zones, collecting and preserving butterflies, an account of the appearance, range and habits of each species, a black and white photo of each species (as well as a few colour photos), a butterfly check-list and even an account of butterflies which have not yet been found in Saskatchewan but which may be expected to occur here. I would certainly classify this as a 'first class regional butterfly book in Canada'".

Another member (from the U.S.) writes: "...what prompts me to respond is the hint of another dues hike. The suggestion (warning) that membership in the new CFBS could cost $30-35 per member definitely got my attention. I have been a member of the Canadian Entomological Society for over 30 years but will be cancelling my membership when the next dues increase is announced."

I appreciate the difficulty of accepting the assessment of the BCC dues for U.S. members who would not gain directly. I hope to assure this member though that the last dues hike would be more than offset by the reduced page charges should he publish a paper of two or more pages in *The Canadian Entomologist.*

D.C. Eidt, President,
E.S.C.

SOCIETY BUSINESS / AFFAIRES DE LA SOCIÉTÉ

1990 Joint Meeting of the Entomological Societies of Alberta and Canada

The Entomological Society of Alberta will be hosting the 1990 meeting of the Entomological Society of Canada from October 7 - 10, 1990 in the scenic town of Banff, Alberta. Mark this date on your calendar NOW and plan to join us.
The organizing committee would like to invite those interested in organizing or participating in "Discussion/Special Interest Groups" to write to:

Dr. Ron Gooding, Chairperson,
Scientific Program Committee,
Department of Entomology,
University of Alberta,
Edmonton, Alberta T6G 2E3

Student Affairs Committee - Employment Booth

The Student Affairs Committee will organize an employment booth this year at the ESC Annual Meeting. The booth will probably be located in the exhibition hall, but its exact location will be posted at the registration desk. We ask that anyone with an opening for a job or a graduate student bring a job description to the Annual Meeting. This description will be placed in a folder. People seeking employment should bring several copies of their resume, and place one in the folder advertising the job for which they wish to be considered.

To be effective in bringing together prospective employers and employees, we need **YOUR** participation.

1988-89 Committees

(for original list see Bull. 20:6, 35)

Insect Common Names and Cultures

Elspeth Belton, Chair
add: Laurent LeSage (SEQ)
delete: Paul Benoit

Membership

Bernie Roitberg, Chair
P.W. Riegert replaces P.G. Mason for ESS

Public Education

Joe Shorthouse, Chair
John Doane replaces Paul Riegert for ESS because of change of Director

Scholarships

J. Hollebone, Chair
Fund raising subcommittee: Bill Chapco replaces Ken Pivnik for ESS

Diseases and Insects of Vegetables

Appointees to CPS-ESC joint committee: D.G. Harcourt and C.R. Ellis

Ad Hoc Search Committee for Secretary

J.E. Laing, Chair
D.C. Eidt
J.N. McNeil
E.C. Becker

President's Update

By the time you read this, the mid-term meeting of the Executive Committee will have taken place. Right now, there is not a great deal to report, but rest assured that the vital functions of publication, financial management and preparing for the St. John's meeting are in good hands. There will be, unless human nature has changed, some missing committee reports when the Executive meets. Chairmen of committees are obliged to submit reports to this and the last Board meeting (30 Sept. and 1 Oct. this year) even if there has been no action.

Contributions to the book on diseases and insect pests of vegetables are flowing in nicely, according to Committee Chairman John Garland. Concerns for other aspects of the process have emerged. To this end, it was decided to appoint two people to the Canadian Phytopathological Society marketing committee that did such a good job of marketing the CPS book on diseases of field crops. Other details, such as who will write the French version, who will do the layout and design work, and how the costs and profits (or losses) will be shared by the two societies, will be negotiated shortly.

An ad hoc committee, which is writing an update of the Society's pesticide policy statement, is making progress. The work has been handicapped by Committee Chairman Nello Angerilli's temporary assignment to Indonesia. Suggestions and ideas may be passed to Gary Kinoshita or Stuart Hill.

Freeman McEwen, Chairman of the Committee on Research Benefit/Cost, informs me that Jill Johnson, candidate for the Masters in Agriculture at the U. of Guelph Department of Agricultural Economics and Business, has chosen this theme for her thesis. I regard it a fortuitous turn of events to have a scholar devote her individed attention to the task, which Dr. Mc Ewen adds will produce a report that is credible in the eyes of economists.

In a letter (elsewhere in this issue), Bryan Frazer comments on the BCC-CFBS merger. Dr. Frazer is not impressed with the emphasis on lobbying by the CFBS, which he sees as expensive and

largely ineffective. He advocates more public information (marketing or advertising the role of science and scientists in society) because the politicians only react to what they perceive the people want. I agree with him completely, and it will take some pressure on the part of the ESC to persuade the new CFBS and its member organizations of this.

Dr. John Doane, Saskatoon, replaces Paul Riegert as Director representing the Entomological Society of Saskatchewan on the Governing Board. We'll miss Paul, but John is a worthy replacement who will serve both societies well.

Joe Shemanchuk will step down as Secretary at the end of 1989. That means he will not be keeping me, the incoming President, Jeremy McNeil and others straightened out. The Secretary plays a key role in the Society and it will not be easy to find a successor. John Laing, 2nd Vice-President, is Chairman of a search committee and would be happy to hear of any prospective candidates.

My talk to the Eastern Spruce Budworm Research Work Conference on the future of spruce budworm research (bleak because of underfunding) got good news coverage locally. I asked the Bulletin Editor to consider it for publication because one could fit almost any other pest insect into the scenario.

For a particularly informative article on the state of science and technology policy in Canada, see *Chemistry and Engineering News*, pp. 7-14. March 6, 1989. Written by an American scinece writer, it should be free of any Canadian partisan or other biases.

Errata: The projected cost per member to join the new CFBS is $35 and not $30 as I worte before: this is $28 higher than we pay per Canadian member to belong to the BCC. I apologize for previously incorrectly writing the name of the Quebec Society in my first "Update". It is Société d'entomologie du Québec. The French name of the ESC follows the same syntax.

Rapport Intérimaire du Président

Lorsque vous lirez ceci, la réunion du Comité exécutif sera chose du passé. À ce moment je n'ai pas grand chose à rapporter, mais soyez assurés qu'on n'a pas négligé pour autant les détails importants ayant trait à la publication, la gestion financière, ainsi qu' à la préparation de la réunion de St. John's. La perfection n'étant pas de ce monde, il faudra s'attendre à l'omission de quelques rapports de comités a la prochaine recontre de l'Exécutif. Les presidents de comités doivent soumettre leurs rapports à la reunion de St. John's et aussi à celle des officiers prévue pour le 30 septembre et 1 octobre prochains, et cela meme s'il n'y a eu aucune démarche.

Vos contributions au manuel des maladies et ravageurs des légumes nous parviennent à bon rythme, selon le président du comité John Garland. Mais certaines inquiétudes persistent quant à d'autres aspects du project. Nous avon donc décidé de nommer Doug Harcourt et Cliff Ellis au comité de marketing de la Société canadienne de Phytopathologie, lequel avait si bien réussi le marketing de son manuel sur les maladies des grandes cultures. D'autres détails portant sur la responsabilité pour la traduction française, la disposition typographique et les illustrations, et la répartition des coûts et profits (ou pertes) entre les deux sociétés, seront négotiés sous peu.

Le comité ad hoc responsable de la rédaction et de la mise à jour de la politique que prône la Société sur les pesticides va toujours de l'avant. Cependant il ressent l'absence de son président, Nello Angerilli, temporairement détaché auprès de l'Indonésie. Vous n'avez qu'à faire parvenir vos idées et commentaires à Gary Kinoshita ou Stuart Hill.

Freeman McEwen, president du comité Bénéfices/Coûts en Recherche, m'informe que Jill Johnson, une candidate à la Maîtrise en Agriculture, du Département de l'Économie et des Affaires de L'Université de Guelph, a choisi ce thème come sujet de thèse. Je considère assez fortuit qu'une

étudiante de son calibre veuille consacrer toute son attention à cette question, ce qui selon Dr. MacEwen aboutira à un rapport pouvant satisfaire les économistes.

J'ai reçu une lettre (publiée ailleurs dans le présent numéro) de Bryan Frazer dans laquelle il discute de la fusion CCB-FCSB. Dr. Frazer se dit peu imporessioné par la stratégie de lobbying adoptées par le FCSB, tactique qu'il considère dispendieuse et largement inefficace. Il préconise plutot de mieux renseigner le public (ex. projet bien conçu de marketing ou d'annonce publicitaires sur le rôle de la science et des chercheurs en société), parce que les politiciens réagissent seulement à ce qu'ils perçoivent voulu des gens. Je suis entièrment d'accord avec lui, et la SEC aura beaucoup à faire pour convaincre la nouvelle FCSB et ses organisations membres de cette nécessité.

Dr. John Doane, de Saskatoon, remplace Paul Riegert comme Directeur representant la Société d'entomologie de Saskatchewan au Conseil d'Administration. Paul va nous manquer, mais nous avon en John un digne remplaçant qui saura bien desservir les deux sociétés.

Joe Shemanchuk se retire comme secrétaire a la fin de l'année; donc plus personne pour nous faire éviter les écueils à Jeremy McNeil, moi-même et tous les autres responsables. Le secrétaire joue un role prépondérant dans les affaires de la Société; il sera très difficile de lui trouver un successeur. John Laing, 2e vice-président, préside une comité chargé de cette responsabilité. Toutes suggestions de candidature de votre part seraient très appréciées.

Ma conférence sur l'avenir des recherches sur la toreuse des bourgeons de l'épinette (morne considérant les médiocres subventions), a l'occasion du Colloque Eastern Spruce Budworm Research Work Conference, a reçu une bonne publicité locale de la part des médias. J'ai demandé au rédacteur du Bulletin de bien vouloir considérer sa publication puisq'on pourrait y substituter n'importe quel autre ravageur dans le scénario évoqué.

Je vous suggèrerais la lecture d'un article particulièrement instructif sur la politique qui prévaut au Canada en matière de science et technologie, voir *Chemistry and Engineering News* pp. 7 - 14, 6 mars 1989. Ecrit par un scientifique américain, on y trouvera certes pas d'esprit partisan canadien ou peu d'autres opinions biaisées.

Errata: Il en coûtera 35$ pour devenir membre du nouveau FCSB et non 30$ tel que je l'avais déjà indiqué: ce qui représente 28$ de plus que ce que nous payons par membre Canadien pour faire partie du CCB. Je m'excuse d'avoir mal écrit le nom de la Société du Québec, qui se dit "Société d'entomologie du Québec". Le nom français de la SEC se conforme à la même syntaxe.

ACANADENT 89

JOINT ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF CANADA
AND THE ACADIAN ENTOMOLOGICAL SOCIETY

Radisson Plaza, St. John's, Newfoundland
October 2 - 4, 1989

Notice and Call for Papers

September 30:	09:00 - 17:00	ESC Governing Board Meeting
October 1:	09:00 - 17:00	ESC Governing Board Meeting
October 2:	09:00 - 12:00	Opening Ceremonies ESC Awards Gold Medal Address Heritage Lecture
	13:00 - 17:00	**Plenary Symposium: Interactions between Insects and Stressed Hosts.** Participants: W. Turnock(Moderator), D. Janzen, D. Jones, Y. Mauffett, D. Pimentel, K. Raffa, G. Surgeoner
	19:00 - 20:00	Graduate Students meet the Governing Board
	20:00	Wine and Cheese Reception
October 3:	08:00 - 09:00	AES Business Meeting
	09:00 - 16:30	**Symposium: Arthropod Faunas of Springs.** Moderators: D. and N. Williams **Symposium: Role of Plant Derived Substances for Insect Control.** Moderator: J. Arnason Submitted Papers
	16:30 - 17:30	ESC Business Meeting
	18:30	Banquet
October 4:	09:00 - 12:00	Submitted Papers **Workshop: Insect Pests of Seeds and Cones.** Moderator: R. West
	12:00 - 13:30	ESC Governing Board Meeting
	13:30	Submitted Papers Special Interest Groups Field Trips / Tours

Note: There is room in the program for additional workshops and special interest groups. Members planning to organize informal workshops should send details to the Program Chairman before June 1. When submitting proposals, provide title, moderator, anticipated attendance and projection equipment needed

ACANADENT 89

List of Possible Conference Tours

Tour 1. Pre-Conference Wilderness Tour (Sept. 30 - Oct. 1).
Includes boat tour of sea bird islands, visit to a gannett colony, cod jigging, visits to small coastal communities and an abandoned fishing village. Cost $175/person. Includes transport ation and lunches but not accommodation on Sept. 30.

Tour 2. St. John's Area Tour (Oct. 3)
A three hour bus tour of the scenic and historic highlights of the city of St. John's and surrounding area. Tuesday afternoon. Cost $20/person.

Tour 3. Harbour Tour
A fishing schooner tour of St. John's harbour and Cape Spear. Cod-jigging. Itinerary depends on weather. 2.5 hours. Cost $20/person.

Tour 4. Bog Trot (Oct. 4, 13:00 - 20:00)
Bus and hiking tour of wetlands and barrens. Cost depends upon group size. Over 20 persons - $45/person, under 20 - $65/person. Includes traditional meal.

Tour 5. Post-Conference Tour on Forest Insects of Newfoundland. (Oct. 4 - 8)
A 4 1/2 day tour organized by Forestry Canada, Newfoundland Forestry Centre highlighting major forest insect pests of the Island. Agenda includes visits to spruce budworm and bark beetle damaged black spruce stands and plantations damaged by black army cutworm in central Newfoundland, hemlock damaged balsam fir in Gros Morne National Park, balsam wooly aphid damage in tree improvement areas in southwestern Newfoundland and a visit to a paper mill. The route will include come of the scenic attractions of Newfoundland. Tour commences Oct. 4, 14:00 in St. John's and terminates Oct. 8, 16:00 in Stephenville, with overnight stops in Gander (Oct. 4), Badger (5th), and Pasadena (6th and 7th). Transportation and accommodation at Newfoundland Forestry Centre Field Stations in Badger and Pasadena will be provided at no cost. A $15/day fee will charged for meals taken at the field stations. Participants will be responsible for the cost of their accommodation at Gander and meals eaten away from field stations. Flights depart from Stephenville on Oct. 8 for the mainland . Attendance is limited to 30 on a first-come basis. Participants should reply on or before 1 June 1989.

ARTICLE

The Future of Spruce Budworm Research

D.C. Eidt, President, Entomological Society of Canada

The following is based on a talk given to the 13th Annual Eastern Spruce Budworm Research Work Conference, Hugh John Flemming Forestry Centre, Fredericton, N. B., 24 January 1989.

What is the future of budworm research? In a word, bleak. Having said that, I must give my reasons for saying so. First I will give a brief historical perspective. Then I will outline the present situation, the control options, and the outlook for new options. Finally I will state what I believe has to be done to ensure that the forest industry does not find itself without control options.

Historical

Spruce budworm research has been going on in Canada since the First World War, in response to the outbreak of 1910-1920 in New Brunswick. It received great impetus from the outbreak of the late forties-early fifties and, of course, from the realization that, in order to assure the vital forest industry a wood supply, we could not afford to give it up to the spruce budworm. Until 1945, there was no practical way to protect forests. It was the development of DDT and the surplus of good aircraft after World War II that made it possible. The way we protect our forests has greatly changed because of new knowledge, and we have to continue to search for more effective, economical, safer, and environmentally rational tactics. The history of budworm research, with variations, has been similar elsewhere.

The Present

Throughout the budworm-susceptible forests of northeastern North America, budworm populations are declining. The protected forests are green and growing, and the unprotected budworm-devastated forests are regenerating themselves. Last year and this year, the hazard was and is great enough to require protective measures only in the Gaspé and adjacent parts of northern New Brunswick.

Going out of sight, the budworm is also going out of mind. Research teams are shrinking, and budgets for those who remain are shrinking. The following table should give some idea of what has been happening. The numbers are the best estimates I could find of federal scientists involved full time in some aspect of budworm research. Numbers of university and contract researchers follow similar trends because they depend mainly on federal funding.

	PEAK	NOW
Newfoundland	3.5 (1979)	1.6
Maritimes	14(1970)	7.5
Northeastern US	15(1982)	0.5
Maine (state)	5(1982)	0.5
Quebec	6(1988)	6
Ontario	22(1950)	12.4
Total	65.5	28.5

So What?

To short-sighted pragmatists it seems logical to reduce research effort when the problem diminishes. But is it realistic? No, it is not. I will explain. But first I must outline the present situation.

The depredations of the spruce budworm can be controlled safely and economically with fenitrothion and aminocarb, and less reliably at greater cost with *Bt*. Fenitrothion is under attack off and on by some environmentalists who presume to know more about ecology and environmental toxicology than the scientists do. Don't misunderstand me, I appreciate that peoples' fears are real and, in many contexts, political reasoning may be just as valid as scientific reasoning. Furthermore, scientists and forest managers know that all forest management practices have environmental costs, and are constantly searching for better ways to reduce these costs.

Aminocarb, which is more benign than fenitrothion, is unavailable because the market is too small for the manufacturer to produce it. That is because all "chemicals" have been banned for forest spraying in Ontario, Quebec, and Nova Scotia for political, not scientific, reasons.

That leaves *Bt*, and much to the credit of a number of government and industrial scientists, there is a great deal of research going on to make *Bt* more effective and economical. There is also research going on to ensure our confidence in *Bt*'s environmental safety; although this is slow coming because of the presumption that *Bt* is safe.

My concern is that *Bt* kills insects because of the toxin it produces. For some reason, in spite of aflatoxins, domoic acid, cocaine, and viper venom, people still seem to think that natural chemicals are safe and artificial ones are not. Thus, we cannot rely on *Bt* or any other pest control product or tactic as being a panacea. Neither can we depend on finding a final solution to the budworm problem, as some people believe possible.

What happens if forest managers lose *Bt* as a forest management tool? The chances are that the industry will be defenceless, the next outbreak will rage out of control, the industry will have to adjust to a diminished wood supply, people will lose jobs, and communities dependent on the industry will suffer. Nobody knows the time frame of this scenario, but it is more likely to happen if government support for budworm research is not increased.

Why emphasize government support?

Insect control methods of the future have to be more target specific, which means they have to be hazardous, if possible, only to the target pest. That is expensive. Pesticide industries are not interested because the market for a specific insecticide or other insect control method is small and unprofitable. Industry is leery of broad spectrum pesticides these days because of public chemophobia and mistrust of scientists, public regulatory officials, and pest managers. It costs between $12 and $90 million to develop a new insecticide, and that has to cover the failures too. Biological insecticides are at the lower end of the cost scale because less environmental impact study is required, but the biologicals are usually more specific and less interesting to the companies.

Future controls

Nobody knows what these will be: take your pick of parasites, diseases, antifeedants, pheromones, molting hormones, bioengineered trees, alternative tree species, selected and bred trees, or any number of approaches that I haven't mentioned. Individual researchers sometimes appear to know because of the way they have to boost their own approach in the intense competition for very limited funds. Controls of the future will have to be based on a greater knowledge of the budworm itself. We must find its Achilles' heel. We have to know more about its relationship with the host tree: how it

physically and chemically relates to the tree, its nutrition, and how the tree reacts to damage under a multitude of circumstances. We have to know more about the parasites, predators, and diseases of the budworm, and more about its physiology, particularly its reproductive and endocrine physiology. We have to know more about the dynamics of its populations, its reproductive biology, demography, and behavior, as well as those of its hosts, parasites, predators, diseases, and competitors. We must find out why budworm populations soar and then collapse. There are enough potential PhD theses for a thousand scholars, and we still wouldn't know everything, because the budworm is an organism as complex as any other, including man. To know is to understand and to understand is to be in control.

Why is the federal government cutting back on research?

The answer is simply that they do not understand it and people don't demand it. According to a recent survey, the professional group most ignorant of science and the environment is lawyers, and 80% of politicians are lawyers. In times of restraint, science is usually cut first, because most people don't care; politicians dare not cut social programs even if they are retrogressive. This is not a feature particular to any present government. The process has been going on in Canada under at least the last four governments, and the public is to blame because we allow it to happen. It's happening in Britain, the U.S., and, I understand, in Australia too.

How is research being cut in Canada?

Canada spends only about 1.35% of its GNP on research, only half the average of its major competitors. Canada has less than half the per capita number of scientists in its work force than the average of the industrialized developed countries.

Research effort is diverted into high profile fields from those of fundamental importance. For example, the much heralded space research program involves no new money; the government's own news release indicates diversion of funds from other fields including agriculture, forestry, and the environment, which are fundamental. The concept seems to be that "science" is a designer of saleable widgets.

The National Sciences and Engineering Research Council, which is the principal agency through which university researchers are funded, has run grant programs only to be told that there is no money for them.

Budget cuts are a recurring phenomenon, yet research is investment, not charity.

The money that is available is gobbled up largely by overhead, which is jargon for all the administrative and management costs. Administrators and most managers are paid according to the size of their empires, not what they accomplish, so the situation just gets worse. It seems a whole new generation has not heard of Parkinson's Law.

Summer student employment programs are getting smaller in spite of government statements of the contrary. Current policy assigns a higher proportion to private business and industry, while budworm researchers, who depend heavily on students to help with the heavy summer workload, have been getting fewer every year. It seems there is an attempt to turn all students into business entrepreneurs instead.

Research budgets have been cut to the extent that many govenrment researchers have to scrounge outside for help and use of equipment.

Buildings such as the Hugh John Flemming Forestry Complex are relatively easy to get because they tell the public that the government is doing something. The fact is that there are now fewer researchers, particularly in budworm research, than there were when the building was planned. Buildings don't do research.

I could add to and expand on this list, but I think I have made my point.

It is obvious to most researchers that politicians do not understand the difference between science and technology, let alone the difference between basic and applied scientific research. Technology is applied science, the application of knowledge acquired through research into problems and processes in society. Technology stems from a broad base of applied research, which has immediate problem-solving goals. Like the base of a pyramid, basic research forms the foundation. If the pyramid is inverted, it topples over; if we invest only in technology, which feeds on research, we impoverish technology. Politicians and their advisors seem to think that goals for research can be set and attained within a fiscal year, but we know that science doesn't work that way. Technologies we take for granted today are based on research done twenty or more years ago.

There is a strong trend in government to do only research that is demanded by industry, and to support research in universities only if costs can be shared with industry (the "matching funds" program). This would preclude any basic research and all but the most immediately applicable research because industry is motivated by short term profit, and governments seldom plan beyond the next election campaign. I wouldn't say the motivation of industry is wrong, but rather that we should be able to look to the government to foster the long term interests of society.

There are people in high places who believe that Canada can import technology, and point to Japan as an example. They are out-of-date, because Japan now invests a much greater proportion of its GNP on research than we do, and it is increasing, because they have realized that it is the only way they are going to stay ahead in international competition. Only countries with low labor costs can profit by importing technology.

Back to the budworm

It seems I have rambled off the subject of budworm research. Not so. Budworm research involves chemistry, physics, genetics, physiology, ecology, and other basic disciplines as they apply to the insect, its hosts, its enemies, and the natural environment in which we find it. If the present trend towards less support for budworm research continues, we could lose a large part of our past investment because data must span a considerable time to allow meaningful interpretation of trends, variations, and reasons for them. The key to some of the most important budworm secrets is to study populations when they are low, and that is when the work is most difficult and expensive, but it must be done now, or be postponed until after the next outbreak in 25 to 30 years. Future generations will suffer if timber is lost because we conduct research only at times of outbreaks.

If we really want a more effective, economical, safer, and environmentally benign way to deny our wood supply to the budworm, then we will all have to demand more research, not less. "We" includes forest managers, researchers, environmentalists, the general public, and, as guardians of the public interest, the media. Most politicians are not really moved by logical or financial arguments, only by the perception that votes are to be gained or lost. I urge you to get involved and speak up.

Raymond Rene Lejeune (1916-1987)

Ray Lejeune died at his home in Victoria, B.C. on 7 November 1987. Although he had been in poor health for several years, he never lost his deep interest in or concern for forestry and entomology. He maintained a quiet affection for his former colleagues in the federal and provincial services and in industry. He had an abiding interest in the Entomological Society of Canada.

Ray was born in Makinok, Manitoba on March 30, 1916. All of his schooling was in Manitoba. He graduated from the University of Manitoba in 1937 with a Bachelor's degree and the Roderick McKenzie Gold Medal and earned his Master's in 1939. His research dealt with the biology and control of the jack pine budworm and then the larch sawfly. Ray had worked at the Forest Insect Laboratory in Winnipeg since 1937 and sought to enlist in the Royal Canadian Air Force when World War II broke out. The government of the day indicated that it was more important for him to continue with his research as an economic entomologist. In 1946, Ray was appointed Officer-in-Charge of the Forest Insect Laboratory. Here he directed the entomological research program on forest insects in the Prairie Provinces.

In 1955, Ray accepted a transfer to Victoria, B.C. as Officer-in-Charge of the Forest Biology Laboratory. In 1964, he became Director of Forest Research for British Columbia under the federal Department of Forestry, a position he held until 1969. A respected research program flourished under his thoughtful, compassionate but firm guidance. The large staff, including those stationed at Vernon, gained a warm "sense of family" under his regime. He further developed and maintained a very good working relationship between federal entomologists and their counterparts at the universities and in the provincial service.

Ray was a valued member of several science organizations including the Entomological Society of Manitoba (President in 1947), the Entomological Society of British Columbia (President in 1964) and the Entomological Society of Canada (President in 1966). He also maintained an interest in the Canadian Institute of Forestry and the Association of British Columbia Foresters.

In 1969, Ray and his wife moved to Ottawa where he accepted an appointment as Co-ordinator of Environmental Forestry. He held this position until retirement in 1971.

Ray was a family man. He is survived by his wife, three sons, one daughter and eight grandchildren.

Paul William Riegert

Dr. Paul Riegert retired on 30 June 1986 after more than 40 years of distinguished service to Canadian entomology as a researcher and teacher. Paul was born on a farm near Laird, Saskatchewan on 5 December 1923 and obtained his early education in that district. In 1944, he completed a B.A. degree at the University of Saskatchewan (in Zoology and Chemistry) and, in 1948, an M.Sc. (Entomology) under the tutelage of James H. Pepper. As a student of the world-renowned insect physiologist, G.S. Fraenkel, he completed a Ph.D. in Entomology and Physiology at the University of Illinois in 1954.

Paul was an Agriculture Research Officer and later a Research Scientist at the Agriculture Canada Research Stations (in the early days, they were known as Dominion Entomological Laboratories) at Lethbridge and Saskatoon from 1944 to 1968. His early work involved surveys of insect abundance of several economically important species, especially grasshoppers and wheat stem sawfly; chemical, cultural and biological control methods; and the effects of environmental factors on the biotic potential of pest insects. For the last five years of his tenure in Saskatoon, he was responsible for the surveys of grasshopper abundance and the production of the annual grasshopper outbreak forecast maps for the Province of Saskatchewan.

From 1952 to 1968, Paul's research interests centred on aspects of physiological ecology, emphasizing humidity reactions, flight, embryological development and reproduction in grasshoppers. In 1968, Paul left Saskatoon to accept a position at the University of Regina and served as Head of their Department of Biology from 1972 to 1979. Although he had a heavy teaching load at that new University, concentrating on cell, animal and insect physiology and parasitology, Paul continued his research activities and published on grasshopper food preferences, energy dynamics and the effects of perturbations on stability and diversity of grasshopper populations.

Throughout his career, as a researcher and teacher, Paul has maintained a continuing interest in the history of entomology and entomologists. This interest reached its first peak in 1980 with the publication of *From Arsenic to DDT: A History of Entomology in Western Canada* (University of Toronto Press). I say the *first peak* because a second volume is on the way, detailing the entomological history of western Canada from 1940 to 1980. He is also working on a history of the International Great Plains Conference of Entomologists (1920-1967), an informal organization of Canadian and American Entomologists now, sadly, defunct.

He has shared his interest in entomological history by means of several vignettes published in the Bulletin of the E.S.C., by booklets of Profiles of Entomologists of Western Canada and in invited lectures to the Entomological Societies of Canada, Saskatchewan, Alberta and Manitoba.

Paul has been, and still is, a member of many national and international societies including: the Royal Entomological Society of London (Fellow); Association d'Acridologie (Founding Member and Councillor, 1970-1973); Entomological Society of Canada (Fellow and Director, 1964-1966); Entomological Society of Saskatchewan (President, 1957, Director to the E.S.C. 1975-1988); Pan-American Acridological Society (now the Orthopterists' Society, Founding Member); and the Canadian Society of Zoologists.

He has also been active in community affairs: as a Chairman and member of the Board of Stewards of Grosvenor Park United Church; as Chairman of the Group Committee and Venture-Company Leader in the Boy Scouts of Canada; and as an active participant in the Heart Association of Canada.

Paul and M.E. (Betty) Brett, of Regina, were married on 12 June 1948. Having raised four fine offspring (the laws of genetics allowed for a 50:50/boy:girl ratio), Paul and Betty should now be able to relax at home in Regina, travel to Hawaii and the like. No doubt that will occur, but not quite yet. Paul is still teaching at the University of Regina, still supervising graduate students and doing sundry duties related to the position of Emeritus Professor of Biology, an honour bestowed upon him by the University when he retired. Much to the benefit of all of us, he is still writing. We wish these two fine people the very best.

Al B. Ewen,
Saskatoon, Saskatchewan

Charles W.B. Maxwell

Entomology lost one of its most colorful personalities with the passing of Charles Wilmot Brown Maxwell on December 7, 1988. Charlie was one of the poineers in fruit entomology, and a well-known and highly respected friend to orchardists and berry farmers across New Brunswick.

Except for periods spent away for his formal training, Charlie worked and lived all his life in Fredericton. His father, Brown Maxwell, was a land surveyor with the New Brunswick government and his mother, Dr. Lillian Maxwell, was a local historian of loyalist stock. In 1932, Charlie married the former Doris Wood, also of Fredericton, and they had two sons.

His undergraduate studies began at Nova Scotia Agricultural College and he completed his degree at Macdonald College, where he obtained an M.Sc. in 1935.

Charlie's early research concentrated on insecticide and fungicide investigations. Later he expanded his interest and responsibilities to include studies on the biology and control of a variety of insects pests of apple, blueberry, strawberry and cranberry. He is probably best known for his work on the behaviour and control of the apple maggot which he continued until his retirement in 1969. His recommendations for control of the apple maggot in New Brunswick are still in effect.

Charlie authored over forty technical and extension publications, served on several provincial and national entomological and horticultural societies, and was an honorary member of the New Brunswick Fruit Growers Association and the Acadian Entomological Society.

George Wood, Jean Adams and Ellen MacGillivray

NEWS OF ORGANIZATIONS / NOUVELLES DES ORGANISATIONS

International Commission on Zoological Nomenclature

Applications published in the Bulletin of Zoological Nomenclature
The following applications were published 16 December 1988 in the *Bulletin of Zoological Nomenclature* 45 (4). Comment or advice on these applications is invited for publication in the *Bulletin* and should be sent to the Executive Secretary, I.C.Z.N., British Museum (Natural History), Cromwell Road, London, SW7 5BD, U.K.

Case 2651
***Aleuropteryx* Löw, 1885 (Insecta, Neuroptera): proposed designation of *Aleuropteryx loewii* Klapácek, 1984 as the type species.**

J. D. Oswald, Department of Entomology, Comstock Hall, Cornell University, Ithaca, NY 14853-0999, U.S.A.
Martin Meinander, Zoologiska Institutionen, Helsingfors Universitet, N. Järnvägsgatan 13, SF-00100, Helsingfors, Finland
Abstract. The purpose of this application is the designation of the nominal species *Aleuropteryx loewii* Klapácek, 1894 as the type species of the 'dustywing' genus *Aleuropteryx* Löw, 1885, since the original type (by monotypy), *Coniopteryx lutea* Wallengren, 1871, was based on misidentified material. The proposed designation is in accordance with the usage of the last 80 years

Case 2655
***Sialis* Latreille, 1802 (Insecta, Megaloptera): proposed conservation by the confirmation of *Phryganea phalaenoides* Linnaeus, 1758 as the type species of *Semblis* Fabricius, 1775 (Insecta, Trichoptera).**

John D. Oswald, Department of Entomology, Comstock Hall, Cornell University, Ithaca, NY 14853-0999, U.S.A.
Abstract. The purpose of this application is the conservation of the well-established megaloptera n generic name *Sialis* Latreille, 1802, by the suppression of an early but overlooked type species designation for *Semblis* Fabricius, 1775, currently placed in Trichoptera but which would otherwise be a senior objective synonym of *Sialis*.

Case 2585
***Ophonus* Dejean, 1821 and *Tachys* Dejean, 1821 (Insecta, Coleoptera): proposed designation of type species**

Hans Silfverberg, Universitets Zoologiska Museum, Entomologiska Avdelningen, N. Järnvägsgatan 13, SF-00100, Helsingfors, Finland
Abstract. The purpose of this application is to retain the names for the ground beetle genera *Ophonus* Dejean, 1821 and Tachys, 1821 in their accustomed usage by designation of *Carabus sabulicola* Panzer, 1796 and *Tachys scutellaris* Stephens, 1828 as their respective type species.

Case 2623
Papilio carthami* Hübner, (1813) and *Syrichthus serratulae major* Staudinger, 1879 (currently both in *Pyrgus* ; Insecta, Lepidoptera): proposed conservation of the names *carthami* and *major

R. de Jong, Rijksmuseum van Natuurlijke Historie, Postbus 9517, 2300 RA Leiden, The Netherlands
Abstract. The purpose of this application is to conserve the Skipper butterfly specific name *carthami* Hübner, (1813) and *major* Staudinger, 1879 by supression of the senior name *maior* .

Case 2654
***Rapport sur les Myodaires du Docteur Robineau-Desvoidy*, (1826): proposed nomenclatural supression**

Curtis W. Sabrosky, Systematic Entomology Laboratory, Agricultural Research Service, USDA, c/o U.S. National Museum, Washington, D.C. 20560, U.S.A.
Abstract. The purpose of this application is the maintenance of stability in the nomenclature of Muscoid (higher) flies by the suppression of a report to the Académie Royale des Sciences (Paris) on the manuscript of J.B. Robineau-Desvoidy's 1830 *Essai sur les Myodaires*. At present the availibility of names in the 1826 *Rapport* is uncertain.

Case 2629
***Physcus* Howard, 1895 (Insecta, Hymenoptera): proposed conservation**

David Rosen & Tova Rivnay, The Hebrew University, Faculty of Agriculture, Rehovot 76100, Israel.
Gennaro Viggiani, Istituto di Entomologia Agraria 'Filippo Silvestri', 80055 Portici, Italy
Abstract. The purpose of this application is the conservation of the chalcid fly name *Physcus* Howard, 1895 (APHELINIDAE) by the suppression of the possible senior subjective synonym *Coccobius* Ratzeburg, 1852

The following applications were published 29 March 1989 in the *Bulletin of Zoological Nomenclature* 46 (1). Comment or advice on these applications is invited for publication in the *Bulletin* .

Case 2603
GRYLLACRIDOIDEA Stal, 1874 (Insecta Orthoptera): proposed precedence over STENOPELMATOIDEA.

K.H.L. Key, Division of Entomology, C.S.I.R.O., G.P.O. Box 1700, Canberra, A.C.T. 2601, Australia
Abstract. The purpose of this application is to conserve the name GRYLLACRIDOIDEA Stal, 1874 of the nominal species(first used at the superfamiliy level by Zeuner, 1935) by giving family-group names based on *Gryllacris* Audinet-Serville, 1831 precedence over family-group names based on *Stenopalmatus* Burmeister, 1838

Case 2646
***Ptochis* Schönherr, 1826 (Insecta, Coleoptera): proposed conservation by confirmation of Marshall's (1916) designation of *Ptochus porcellus* Boheman in Schönherr, 1834 as the type species.**

R.T. Thompson, Dept. of Entomology, British Museum (Natural History), London SW7 5BD, U.K.
Abstract. The purpose of this application is to conserve the name *Ptochis* Schönherr, 1826 for a weevil genus, by setting aside and overlooked and inadvertent type designation of a misidentified spe-

cies. In addition the Commission is asked to confirm Marshall's (1916) designation of *Ptochus porcellus* Bohemann in Schönherr, 1834 as type species. This is in accordance with current usage.

Case 2680

***Euribia jaceana* Hering, 1935 (currently *Urophora jaceana*; Insecta, Diptera): proposed proposed predecence over *Euribia conyzae* Hering, 1933.**

I. M. White, CAB International Institute of Entomology, 56 Queen's Gate, London SW7 5JR, U.K.
P. Harris, Agriculture Canada Research Station, 5000 Wascana Parkway, P.O. Box 440, Regina, Sask. S4P 3A2, Canada

Abstract. The purpose of this application is to request that the well known name of the knapweed gall fly, *Euribia jaceana* Hering, 1935, be given precedence over *E. conzyae*, Hering, 1933, by any author who considers these nominal species to be synonyms.

The following Opinions were published on March 29, 1989 in Vol. 46, Part 3 of the *Bulletin of Zoological Nomenclature*.

Opinion 1523 *Corisa germari* Fieber, 1848 (currently *Arctocorisa germari*; Insecta, Hemiptera): neotype designated

Opinion 1524 *Corisa distincta* Fieber, 1848 (currently (*Sigara* (*Subsigara*) *distincta* ; Insecta,Hemiptera): specific name conserved

Opinion 1525 *Phymatodes* Mulsant, 1839 and *Phymatestes* Pascoe, 1867 (Insecta, Coleoptera): conserved

Opinion 1526 *Nanophyes* Schoenherr, 1838 (Insecta, Coleoptera): conserved

Opinion 1527 *Polymmatus emolus* Godart, [1824] (currently *Anthene emolus* ; Insecta, Lepidoptera : specific name conserved

Opinion 1528 *Pyralis nigricana* Fabricius, 1794 (currently in *Cydia* or *Laspeyresia* ; Insecta, Lepidoptera): specific name conserved

Opinion 1529 *Ceutorhyncus* Germar, 1824, *Rhinoncus* Schoenherr, 1825 and *Curculio assimilis* Paykull, 1792 (Insecta, Diptera): conserved and *Curculio assimilis* Paykull, 1792 and *Curculio pericarpius* Linnaeus, 1758 designated at the type species of *Ceutorhynchus* and *Rhinoncus* respectively

Opinion 1530 *Coeloides* Wesmael, 1838 (Insecta, Hymenoptera): *Coeloides scolyticida* Wesmael, 1838 designated as the type species

Opinion 1531 *Disophrys* Foerster, 1862 (Insecta, Hymenoptera): *Agathis caesa* Klug, 1835 designated as the type species

Proposed fourth edition of the *International Code of Zoological Nomenclature* - A call for possible amendments to the third (1985) edition.

The International Commission on Zoological Nomenclature has embarked on the preparation of a new (fourth) edition of the *Code* and has established an Editorial Committee for that purpose. It is expected that publication will be in late 1994 or 1995. A considerable number of possible amendments have been suggested and these will be examined by the Editorial Committee. The Commission invites the submission of further possible amendments to the current (1985) *Code* and these should be sent as soon as possible to the Executive Secretary, I.C.Z.N., British Museum (Natural History), Cromwell Road, London, SW7 5BD, U.K. It is intended that the proposals received by the end of 1989 wiull be discussed at meetings held in conjunction with the International Congress of Systematic and Evolutionary Biology (ICSEB) in Maryland in July 1990.

Official Lists and Indexes of Names and Works in Zoology - Supplement

The *Official Lists and Indexes* was published in 1987. This gave all the names and works on which the International Commission on Zoological Nomenclature has suled since it was set up in 1895 to December 1985. There were about 9,900 entries. In the three years since 1985, 544 names and 3 works have been added to the *Official Lists and Indexes* . A supplement has been prepared giving these additional entries, together with some amendments to entries in the 1987 volume. This supplement can be obtained without charge from the following addresses, from which the *Official Lists and Indexes* can be ordered at the price shown:

The Internation Trust for Zoological Nomenclature, British Museum (Natural History), Cromwell Rd., London SW7 5BD, U.K. Price - £60 or $(US)110

The American Association for Zoological Nomenclature, c/o NHB Stop 163, National Museum of Natural History, Washington, D.C. 20560, U.S.A. Price $(US)110 ($100 to ASZN members)

Remembering Our Entomologists

Herman William Moore (1911 - 1950)

Herman Moore was born on 15 July 1911 in Winnipeg, Manitoba. He obtained his B.A. in Arts and Science in 1934 at the University of Manitoba. He was taken on staff as a graduate student assistant at the Dominion Entomological Laboratory, Brandon, Manitoba on 17 May 1934. Grasshoppers were a rising threat on the prairies at that time and were the main emphasis in the investigations at the Brandon Laboratory.

An investigative approach to discover reasons for the immense and dangerous fluctuations in the abundance of grasshoppers was the "Study Block" idea. Each block consisted of a few square miles within an area thought to be the centre of a more or less continuous grasshopper infestation. This approach was devised by a committee of entomologists in the four western provinces. It may have Stemmed from the "permanent breeding centre" hypothesis valid for some of the Old World locusts.

Herman took change of a Study Block near Arnaud in the Red River Valley of Manitoba in 1936 and 1937. The terms of reference about the attributes of grasshopper biology and ecology were all inclusive. One of Herman's close associates, D. Seyward Smith, was quoted by P.W. Riegert in his book "*From Arsenic to DDT* ": "Because the grasshopper study was set up a committee, it was unworkable". This author recalls Herman's dismayed remarks about the apparent failure of this ambitious enterprise. Nevertheless, Master's degrees, inlcuding Herman's, were earned from theses prepared from data gleaned from the Study Blocks. In retrospect, this false start may have been a necessary mistake - one that had to be made.

From the Study Block experience, Herman developed a more realistic experimental design based on the assumption that grasshopper populations could increase to an economic level anywhere within the agriculturally developed areas of the prairies. Sampling points, representative of this area were established, and samples of grasshoppers collected at regular intervals during each active growing season. The collected material was shipped to specialists for examination for internal parasites and pathogenic organisms. Herman concentrated on tracing the seasonal development of the population. He did not live to realize the maximum returns from this research. Later, Roy Pickford demonstrated experimentally that timing in the development of a grasshopper population is vital to maximizing its reproduction and hence capacity for year-to-year increase.

In 1944, a transfer to the Dominion Entomological Laboratory in Saskatoon placed him in a position more central to the main grasshopper problem. In April, 1946, Herman took over the coordinating of all grasshopper research and surveys in western Canada.

An early bout with rheumatic fever left Herman partially disabled and late in 1950 (December 30), the condition felled him. Thus an experienced and thoughtful scientist was lost. His loss had a deleterious effect on the productivity of the grasshopper project - at least for a time.

Herman and "Neddie" Johnson were married in 1938. They had two sons, Jack and Bill, both still young boys at the time of Herman's passing.

L.G. Putnam, Saskatoon, Sask.
(with the assistance of R.H. Handford,
Seyward and Marian Smith)

PUBLICATIONS

BOOK REVIEWS

Notions d'entomologie forestière, Bernard Comtois, Modulo Editeur, 1988, 214 pages, prix: 20,00$

L'oeuvre, divisée en quatre parties, comprend dix-huit chapitres. Il s'agit d'un premier traité québécois, rédigé en français et abordant l'entomologie forestière dans son contexte nord-américain, écrit fièrement Yvan Hardy, ing. f., Ph. D., qui signa la préface de ce document. L'auteur aborde, poursuit-il, dans un langage simple, précis «les principales de la dynamique des populations d'insectes, des interactions plantes/insectes et de la lutte intégrée, essentiels à la compréhension et à l'aménagement des écosystèmes forestiers. Quelle présentation!

L'auteur fractionne la première partie en quatre chapitres. Il rappelle des notions de base comme le rôle bénéfique des insectes, leur structure, développement et cycle évolutif. Il aborde la classification des insectes, revoit leurs caractéristiques et leur écologie, pour décrire, en dernier lieu, la classification des insectes ravageurs de la forêt, de leurs dégâts et des signes (36 pages).

La seconde partie analyse des notions d'écologie particulières aux insectes en deux temps. D'abord, la dynamique des populations d'insectes forestiers et, en second lieu, les interactions plantes/insectes phytophages, fruits d'une longue co-évolution naturelle (2 chapitres, 23 pages).

La troisième partie survole, d'une façon succincte mais concise, les notions de contrôle. Cette partie se développe sur six chapitres, pour un total de 52 pages. Il y est fait mention de lutte intégrée contre les insectes forestiers ravageurs, dans un contexte d'aménagement forestier anthropocentrique; puis de répression de ces populations à l'aide d'agents biologiques, voire même chimiques. Suit une dissertation sur les méthodes d'application des insecticides. Cette partie se termine par une réflexion sur des méthodes physiques, mécaniques et sylvicoles de contrôle des ravageurs, ainsi que sur les méthodes de détection et de surveillance de ces mêmes populations.

Ces deux parties sont le coeur de cet ouvrage et présentent une belle synthèse des connaissances acquises à ce jour dans le monde de l'entomologie. La lutte intégrée au Québec, ça viendra!

La quatrième partie, subdivisée également en six chapitres, couvre 71 pages. Chacun de ces chapitres traite d'un groupe d'insectes de différents ordres, réunis dans des unités de classifications pratiques comme suit: défoliateurs, suceurs de sève, perceurs de phloème, perceurs du xylène, insectes des méristèmes, insectes et acariens galligènes.

L'oeuvre contient une nomenclature des insectes décrits, un glossaire (77 termes), une riche bibliographie (330 références), puis un index des sujets. De plus, au rythme des pages, l'auteur présente 40 figures, 13 tableaux et plus de 80 photos d'insectes (à différents stades de développement). Il faut feuilleter ce document avec soin, de peur que les insectes s'échappent, tant les photos sont claires, vivantes!

Voilà un document qui comblera beaucoup de notes de cours incomplètes, surtout pour les plus âgés d'entre nous! Le lire, c'est pénétrer plus profondément dans ce monde mystérieux des insectes de la forêt qu'on dit nuisibles.

Henri N. Le Blanc, ing. f.
CERFO
Sainte-Foy, Qué.

Niemczyk, E. and A.F.G. Dixon (eds.). 1988. *Ecology and effectiveness of Aphidophaga.* Proceedings of the 3rd International Symposium held at Teresin, Poland, Aug. 31 to Sept. 5, 1987.SPB Academic Publishing bv, The Hague. 341 pp. + 3 pp. of photographs of participants. 170 Dfl. ($(Can.)90.00).

This is the third in the Aphidophaga series, familiar to aphid specialists around the world. As a proceedings, the book contains abstracts of papers and posters, summaries of previous work, reviews and original work organized into 6 sections, each ending with a "Concluding remarks" or a "Summing up" paper. The sections are: food ecology/ethology, 9 contributions; diapause/life cycle strategies, 15 contributions; distribution in habitats, 11 contributions; impact/biological and integrated control, 25 contributions; parasites, predators and disease, 5 contributions; and resistance to pesticides, 2 contributions. The work of 66 participants from 20 countries on 5 continents is included.

The table of contents is followed by an index of authors, a list of the officers of the symposium and and a listing of the names and addresses of the participants. An index of insect species is also included. The book is ruggedly bound, printed on non-glossy bond in a computer font that I found stressful to the eyes after a while. The printing is not typeset or right-justified and scientific names are not differentiated from regular type.

This volume is unlike other multiauthored books: as a proceedings of a meeting, it is not a balanced exposition of topics, critically controlled by the editors. It is a full survey of the presentation of the participants at the symposium. The papers for the most part are reviews or summaries of either the authors' past works, recently published papers or descriptions of local occurrences of specific species. Only 9 papers are original experimental works; the majority of the reviews repeat recent more in depth critiques of major portions of the literature.

The quality of the papers and the work they report is highly varied. Several excellent included papers would have been acceptable in any journal but many would not be. It would seem that the purpose of the volume was to publish something from each participant. The majority of contributors (48) are from Poland, countries bordering Poland and neighbouring European countries. The book therefore makes available works that are often inaccessible because of availability or language. The book is a valuable source of biological data, methods and approaches used by biological control workers on a broad diversity of species. I continue to consult previous volumes in the series for such information. However, the same information is accessible by computer today, whereas it was not when previous editions were produced.

This book will not serve the varied, lasting functions possible with, for example, the proceedings of the Royal Society on biological control reviewed recently in the Bulletin. Anyone who works with aphids or their natural enemies should check the book out for themselves but the cost of the book may exceed its value to many researchers.

Bryan Frazer,
Agriculture Canada Research Station
Vancouver, British Columbia

Johnson, W.T. and H.H. Lyon. 1988. *Insects that feed on trees and shrubs.* Second Edition. Comstock Publishing Associates, a division of Cornell University Press, Ithaca and London. 556 pp., 241 pls. Hard cover, $(US)49.95.

This is the second edition, the first one being published in 1976. It has been revised and

expanded to include species recently introduced into North America. The volume includes 241 colour plates and 109 black-and-white illustrations representing more than 900 species of insects and mites harmful to woody ornamental plants in the United States and Canada. A few other pests, such as slugs and birds, are also discussed. The photographs and colour reproduction are excellent and make the best use of lighting on the subjects, even minute ones such as scale insects and mites. The pests are photographed directly on their hosts, and there are many high quality close-ups of the damage. The book is therefore and ideal pictorial guide to both the pests and the damage they cause. Many species and their host plants, distribution and other biological attributes are conveniently presented in tabloid form.

The text is arranged in two parts, first insects that feed on conifers, and then insects that feed on broad-leaved trees and shrubs. Within these two general areas, pest species are arranged in taxonomic sequence: sawflies, caterpillars, aphids, scales and gall makers. The text is scientifically accurate, clear and very informative regarding the biology, life history and damage attributed to the organisms. This is not, nor is it meant to be, a comprehensive taxonomic study of all the species associated with ornamental trees and shrubs, and should not be used as such. However, it contains most of the common insects and related pests encountered in an urban environment, including parks, nurseries and greenbelt areas. It is primarily aimed at urban entomologists rather than at people affiliated with the forest industry. Pests of ornamental trees and shrubs, such as euonymus caterpillar, *Yponomeuta cagnagella* (Hubner), therefore are treated in much more detail than pests of boreal forest trees such as the forest tent caterpillar, *Malacosoma disstria* (Hubner).

In summary, this book is recommended, mainly for those with an interest in pests of ornamentals and urban trees and shrubs, but it also has much of interest to other entomologists and horticulturists.

Suzanne Allyson-Morello
Biosystematics Research Centre
Agriculture Canada
Ottawa, Ont.

Davies, R.G. 1988. *Outlines of entomology*. 7th Edition. Chapman and Hall, New York, London. 408 pp. Hard cover. $(US)75.00, $(Can.)97.50; Soft cover, $(US)37.50, $(Can.)49.00.

In 1942, the British entomologist A.D. Imms published *Outlines of entomology*, which was partly a synopsis of his weighty tome *A general textbook of entomology* (1925 and many subsequent dates). Both books were extensively revised by O.W. Richards and R.G. Davies in the late 1950's; a revision of *Outlines of entomology* last appeared in 1978. Now this seventh edition, largely rewritten by R.G. Davies is available. The main changes enlarge the book to cover modes of insect life, insect populations and insect pests, and to include an extensive classified bibliography. Consequently, the work has a much more modern feel than the earlier editions which emphasized structure, physiology and classification. With the new material, the only major omission in content is a discussion of zoogeography and faunistics.

Providing an outline of the whole of entomology in only 400 pages is a daunting task - all the orders are surveyed in less than 70 pages, for example. The book is well written, and in most places admirably concise. The 160 figures (many of them multiple) are very useful. However, several

discussions appear to me to be oversimplified, chiefly by omission of some of the pertinent facts or ideas (for example, no mention is made, under competitive exclusion, of the possibility that small insects might coexist on abundant food without competition). Nevertheless, even complex subjects, such as the phylogeny of the orders or the use of insecticides, generally receive a balanced overview, and the text is not overcommitted to one or the other of the likely alternative hypotheses.

After a useful introductory chapter briefly indicating the great diversity of the insects and reasons for their success, the book treats insect structure and function (90 pp.). This "classical" material is very well done, but it contains such a large number of concisely presented facts that many students will require a sympathetic instructor to help them cope with the rate at which terminology new to them (mouthparts, sclerites) is introduced. The following chapter (16 pp.) on development and metamorphosis chiefly covers anatomy. Hormonal control and diapause receive only half a page each.

Classification and biology (67 pp.) treats structure and biology of each of the orders in turn. The British occurrence of the groups is emphasized, though often world and sometimes North American diversity are indicated too. A short chapter (13 pp.) on evolutionary relationships sets the various orders in context and exposes the principle of phylogenetic systematics.

The material that is chiefly new for this edition begins with a treatment of important modes of life in insects (53 pp.), such as insect-plant relationships (including leaf miners, galls and pollination), relationships with micro-organisms, predators, parasitoids and aquatic insects.

Insect populations and allied topics are dealt with through a synopsis of rudimentary theory backed by mathematical models. I found this section disappointing; k-factor analysis is prominently treated. The chapter (24 pp.) ends with a realistic assessment of the complexity of population dynamics and of species associations.

Biology and control of injurious insects (53 pp.) provides a worthwhile summary of pests of particular types of products (with selected examples), species of medical and veterinary importance, and insecticidal and biological control methods.

The bibliography, classified according to the chapter subheadings, contains nearly 1,000 entries favouring recent books and reviews. Although the list is very useful, some important recent titles are absent, including several 1987 books. Some earlier works are also missing. For example, Holland's 1949 treatment of fleas is cited but not his much explanded 1985 work (Mem. ent. Soc. Can. 130 [1984]). There is no mention of the *Moths of North America* series (1971 -). Merritt and Cummings' 1978 treatment of the aquatic insects of North America is cited, rather than the revised 1984 edition. In some subjects, British publications appear to be strongly favoured.

The book has very few typographical errors, and I found only a few inconsistencies or errors of fact (e.g. only 64,000 described world species of Diptera are claimed, a number that is much too low; *Choristoneura fumiferana* is said to "defoliate and sometimes kill not only spruce, but also fir, pine, larch and hemlock", althought species of *Choristoneura* other than *fumifierana* are responsible for damage on pine, larch, and hemlock which are at most occasional hosts of *C. fumiferana*; Anthomyiidae (formerly a subfamily of Muscidae) is treated as a family in one place, but the anthomyiid *Delia* is included as a muscid in another).

In summary, this is a good, but not perfect, book. Although fuller treatments of many of the different parts of the material covered here exist, the book provides a broad updated view available in few other texts. It will be useful for appropriate general entomology courses.

H.V. Danks
Biological Survey of Canada (Terrestrial Arthropods)
National Museum of Natural Sciences
Ottawa, Ont.

Lewis, R. E., J.H. Lewis and C. Maser. 1988. *The fleas of the Pacific Northwest.* Oregon State University Press, Corvallis, Oregon. 296 pp. $(US)51.95.

C.A. Hubbard was the last person to present an overall treatment of the fleas of the western United States in 1947. Since that time, there have been numerous advances in the interpretation of the relationships among this complex assemblage of fleas. There have also been significant contributions to the known distributions of these fleas. The authors of this book have compiled these changes and additions, and presented them in this handsomely bound, well-illustrated edition.

The authors include a brief 22 page introductory section, in which they discuss aspects of flea life histories, anatomy, and relationships of fleas and pathogenic organisms, along with general information regarding the region and the following text. The real meat of this book, however, lies in the treatment of the 161 taxa of fleas known or anticipated in the northwest states. Ninety-six of these taxa are also known to occur in Canada.

The book is primarily a taxomonic treatment. Workable keys are provided for all families, genera and species in the region, encompassing Washington, Oregon and northern California and Nevada. Each species is covered by a list of synonomies, and the five-digit code number proposed by Smit and Wright (1978). A small insert map of county records is provided in the margin opposite the species descriptions for a rapid appreciation of the known distribution with the geographic area. Overall distribution, taxonomic relationships and host affinities for most species are discussed in the text.

Despite the authors' decided taxonomic bias, there is a wealth of data on seasonal distribution, specific host relationships and sex ratios of fleas collected primarily in Oregon by Chris Maser. Tables on seasonal abundance are interesting and provide valuable information, but the authors' conclusions about seasonal abundance are sometimes difficult to accept. Without accompanying information on trapping effort, numbers of hosts examined and trapping locations, at least, one cannot legitimately assess the validity of the data. Nonetheless, having provided the data along with their conclusions on seasonal dynamics, the authors have provided a basis for formulation of testable hypotheses for other workers in the field.

In Canada, we have been very fortunate in that George Holland studied our flea fauna for nearly 40 years, particularly the fleas of the west. Because of his contributions to the relationships of North American fleas, the authors have dedicated their work to the memory of George Holland. Many of the illustrations were reproduced with permission from the plates for Holland's 1985 monograph, *The fleas (Siphonaptera) of Canada, Alaska and Greenland.* The remainder were prepared to match Holland's style and the authors have been largely successful in their attempt. Reproduction of the 268 figures is generally of high quality with only two exceptions on pages 136 and 170 in my copy. Figures are conveniently placed throughout the text for easy reference.

The authors provide a comprehensive host/parasite index in an appendix, an essential part of any work such as this. In Appendix II, they present the reader with the benefits of their years of experience in collection and preparation of fleas for taxonomic study. In it there is a detailed description of their own techniques, relevant to those approaching flea research for the first time, and for those with years of experience with the group.

The authors are to be congratulated for their presentation of information on the Pacific Northwest flea fauna. Their work is a valuable asset to anyone interested in the fleas of North America.

Terry Galloway,
Department of Entomology
University of Manitoba

Book Notices

Belton, E.M. 1988. *Lepidoptera on fruit crops in Canada.* Simon Fraser University Pest Management Papers No. 30. Dept. Biol. Sci., Simon Fraser Univ., Burnaby, B.C. 105 pp. Soft cover, $8.00 (Available from SFU Bookstore).

This publication reviews information on about 450 species of Lepidoptera recorded from fruit-bearing plants in Canada. More than 40 of these species are introduced. Seventy-three of the species are constant or fairly regular pests, and information on the occurrence and biology of these species (and some notes on control) are given at the greatest length. Almost half of the the regular pest species are general feeders. Also dealt with are 76 species classified as occasional pests (54) or former pests (22), and 314 species that are casual visitors and cultivated fruit crops (198) or are found on native fruit-bearing plants (116). Within each main section, species are listed alphabetically by genus. A selected bibliography contains 130 entries. A table of the species treated (with host fruits), and an index of common names, are included.

Evans, P.D. and V.B. Wigglesworth (eds.). 1989. *Advances in insect physiology.* Vol. 21. Academic Press, London, Toronto, etc. 238 pp. Hard cover. £32.50.

Detailed reviews included in this 1989 volume are: Hormonal approaches for studying nervous development in insects, by J.W. Truman (34 pp., 13 figs., 102 refs.); Neural repair and regeneration in insects, by J.E. Treherne, P.J.S. Smith and E.A. Howes (50 pp., 15 figs., 180 refs.); Haemocyte behaviour, by A.M. Lackie (94 pp., 7 figs., 394 refs.); and Molecular mechanisms for cuticular sclerotization, by M. Sugumaran (53 pp., 36 figs., 134 refs.). Literature citations include the full titles of papers. A detailed subject index is also included.

Books Available

Kevan, D.K. McE. & G.G.E. Scudder. 1989. *Illustrated keys to the families of terrestrial arthropods of Canada. I. Myriapods (millipedes, centipedes, etc.).* Biological Survey of Canada (Terrestrial Arthropods). vi + 88 pp. ($6.00 + 3.00 postage/handling)

Journal of Aphidology. 1987. A new journal covering every aspect of fundamental and applied aphidological research. ($(U.S.)40.00 per year. Contact: Secretary, The Aphidological Society, c/o Aphid Research Laboratory, M.M. Postgraduate College. Modinagar-201 204 (U.P.), India.

University of Maine - Spruce Budworm Literature Collection

An extensive collection of spruce budworm literature has been donated to the University of Maine's Raymond H. Fogler Library by the USDA Forest Service. The literature files consist of over 5,000 items including United States and Canadian federal agency reports, experiment station documents, symposia proceedings, books and journal articles. The collection served as the basis for a comprehensive bibliography, *North American Coniferophagous* Choristoneura: *A bibliography* . This material is available for use by members of the Entomological Society of Canada.

Proceedings of the meeting "*Climate and Agriculture: Systems Approaches to Decision Making*" will be available soon. The 23 papers plus summaries of all the discussion sessions cover the areas necessary for a systems approach: to pose large-scale complex problems correctly, to model the relationships in a realistic yet compatible manner and to follow up the system through its life cycle. Topics include crop/environmental modeling, remote sensing, public and private meteorological services, expert systems, economic strategies and decision making and understanding and evaluating methods of information dissemination. The proceedings are available at a cost of $(US)25.00 per copy. Cheques payable to the University of Nebraska should be mailed to:

Dr. Albert Weiss,
Centre for Agricultural Meteorology and Climatology,
245 L.W. Chase Hall,
University of Nebraska - Lincoln,
Lincoln, NE U.S.A. 68583-0728

Diseases & Insects of Vegetables in Canada

The ESC-CPS book project is now underway. A list of crops for which ESC contributions are in progress and the coordinators are as follows

CROP	COORDINATOR	TELEPHONE
greenhouse crops	D.R. Gillespie, western	604-796-2221
greenhouse crops	J.L. Shipp, eastern	519-738-2251
asparagus	R.S. Vernon	604-224-4355
beans, curcurbits (field), peas	C. Richtot	514-774-0660
carrot	G. Boivin	514-346-4494
celery, lettuce	A.B. Stevenson	416-562-4113
cole crops	D.C. Read	902-894-8472
corn (sweet)	M. Hudon	514-346-4494
mushrooms	D.L. Rinker	416-562-4141
onions, etc.	G.J.R. Judd	604-494-7711
peppers	R.E. Pitblato	519-674-5456
potato	L.S. Thompson	902-566-6821
tomato (field)	R.P. Jaques	519-738-2251

Anyone wishing to contribute slides or information on pests of the above crops should contact the coordinators. For other crops (artichoke, beet and Swiss chard, celeriac, chickory, eggplant, melons, squashes and pumpkins, parsnip, spinach and garden herbs), contributors are still being sought. Contact J.A. Garland (Chairman, ESC Steering Committee, 613-995-7900).

POSITIONS AVAILABLE / EMPLOIS DISPONABLES

Forest Entomologist (Operational - 2 years)

Forestry Research Institute of Malawi, Zomba

Qualifications: At least five years experience in tropical forest or agricultural entomology. Experience on biological control of pests would be an added asset. Should hold a degree in biological science with specialization or advance qualification in forest entomology. As the expert will also act as a trainer for a local counterpart, she/he will need to have extensive experience gained in tropical countries.

Salary: Approximately £17,200 per annum

Contact: J. W. Knowles, Senior Personnel Officer,
Administrative Division,
Commonwealth Secretariat,
Malborough House, Pall Mall
London SW1Y 5HX
ENGLAND

SCHOLARSHIPS AND GRANTS / BOURSES D'ÉTUDES ET SUBVENTIONS

International Society of Arboriculture - Grants for Shade Tree Research and Educational Projects

The International Society of Arboriculture awards grants to encourage scientific/educational research on shade trees. Grants are not expected to cover all research costs but to aid, stimulate and ecnourage scientific studies. ISA requires that administrative overhead not be deducted from grants. Recipients will be asked to publish their results in ISA's *Journal of Arboriculture*.

Candidates should send no more than 2 pages, in English, telling:
1) Name and address of one principal investigator, 2) Institutions and dates of investigator's college and/or graduate degrees, 3) Title of Project, 4) Purpose of project, 5) Research Plan: how you expect to do the work, 6) Intended use of grant money, 7) Individuals involved in the research
8) Citations of 2 relevant publications by the researcher. (Do not send reprints), 9) How your results will help all arborists' daily tree care work.
For your entire project - 10) How long will the project last?, 11) How much will the project cost?

Send proposals, by December 1, 1989 to: Dr. Frances W. Holmes, Professor, Shade Tree Laboratories, University of Massachusetts, Amherst, MA 01003, U.S.A.

Joint NSERC/SSHRC Science Policy Scholarship

The Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC) announce a new joint scholarship in program for master's studies in the field of science policy.

The first competition will be held in 1989-90 for awards tenable in 1990-91. It is expected that six scholarships will be offered in the first competition, established at the value of a SSHRC doctoral fellowship. Students from all disciplines who have completed, or expect to complete, an undergraduate degree will be eligible to compete.

NSERC will provide funds for the awards and SSHRC will manage the adjuciation process. Both Councils will make application details available in the summer of 1989. Applications are to be submitted directly to SSHRC by December 1, 1989.

UPCOMING MEETINGS / RÉUNIONS À VENIR

VIII International Congress of Acarology, 6 - 11 Aug. 1989. House of Culture of Trade Unionism, Ceske Budejovice, Czechoslovakia.

CONTACT: Dr. F. Dusabek, Inst. of Parasitology, Czechoslovak Academy of Sciences, Branisovska 31, 370 05 Ceske Budejovice, Czechoslovakia.

Third International Meeting on Rhynchota fauna of Balkan and Adjacent Regions, 29 Aug. - 1 Sept. 1989. Marine Biological Station, University of Ljubljana.

CONTACT: Dr. M. Gogala, Prirodoslovni muzej Slovenjie, Presernova 20, P.O.B. 290, YU-61001 Ljubljana, Yugoslavia.

Fifth Triennial Meeting of the Orthopterists' Society, 16 - 20 July 1989. I.C.O.N.A., Valsain, Spain.

CONTACT: Dr. S.K. Gangwere, Biology Department, Wayne State University, Detroit, MI, U.S.A. 48203

International Congress of Coleopterology, 18 - 23 Sept. 1989, University of Barcelona, Spain.

CONTACT: Secretary, Asociación Europea de Coleopterología, Departamento de Biología Animal, Facultad de Biología, Universidad de Barcelona, Avd. Diagonal, 645, 08028 Barcelona, Spain

Joint Annual Meeting of the Entomological Society of Canada and the Acadian Entomological Society, 2 - 4 October 1989. St. John's, Newfoundland.

CONTACT: Dr. D. Larson, Department of Biology, Memorial University, St. John's Newfoundland A1B 3X9

Annual Meeting of the Entomological Society of Manitoba, 2 - 3 Nov. 1989. Freshwater Institute, Winnipeg, Manitoba.

CONTACT: Dr. S.C. Jay, Department of Entomology, University of Manitoba, Winnipeg, Man. R3T 2N2 (204-474-9439)

Troisiéme Conference Internationale des Entomologistes d'Expression Française, 9 - 14 juillet 1990, Gembloux, Belgique.

CONTACT: M.C. Verstraeten, Zoologie générale et appliqué, Faculté des Sciences agronomique de l'Etat, B-5800 Gembloux, Belgique

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International Congresses of Dipterology

The Second International Congress of Dipterology will be held in Bratislava, Czechoslovakia from 27 Aug. - 1 Sept. 1990. The First Circular (with preregistration form) has been distributed. Canadian dipterists who have not received this circular may obtain copies from Dr. Graham C.D. Griffiths, Department of Entomology, University of Alberta, Edmonton, Alberta T6G 2E3 (403-922-3221). The Secretary of the Congress is Dr. L. Jedlicka, Department of Zoology, Comenius University, Mlynská dolina, CS - 842 15 Bratislava, Czechoslovakia.

Proposals for hosting the Third Congress (1994) may be addressed to Graham Griffiths, Chairman of the Council for International Congresses of Dipterology.

1989 Annual Meeting of the Florida Entomological Society

We are pleased to announce the 1989 Meeting of the Florida Entomological Society. The members of your Society are invited to participate in these meetings. The meetings will be held at the Daytona Beach Hilton, 2637 South Atlantic Avenue, Daytona Beach, Fla. 32018 (904-767-7350).

For registration fees, forms and other information, please contact, Secretary, Florida Entomological Society, P.O. Box 7326, Winter Haven, Fla. U.S.A. 33883-7326

Entomological Society of Ontario

The Entomological Society of Ontario will hold its 127th Annual General Meeting in London, Ontario from 27 - 29 Oct. 1989. This year's symposium is entitled "Sustainable Agriculture: An Entomological Perspective".

The meeting will open with a reception at Spenser's Lodge, University of Western Ontario on Friday pm. The President's Prize Competition for student papers will follow on Saturday morning with the symposium session and Annual General Meeting planned for Saturday afternoon. Saturday evening will be topped off with our annual banquet. Sunday will conclude with submitted papers and a tour of the new facilities at London's Agriculture Canada Research Station.

All interested entomologists, amateur or professional, are invited. Contact Dr. A. Tomlin or Stephanie Turnbull for registration costs and details. Scientific papers to be presented should be submitted to Dr. Caroline Bolter before 1 Sept. 1989. All organizers can be reached at 1400 Western Rd., London, ONt. N6G 2V4. (519-645-4452)

MISCELLANEA / DIVERS

A Levity of Lacewings

During a break in the Colloquium on Neuropteroid Insects at the Annual Conference of the Entomological Society of America, the following verses were composed. The style reflects that of a past era when a particular scientific paper that I had on my mind was written.

The Mantispid

One night spied I a mantis-fly
Midst leaves upon a tree.
The mantis-fly to me did cry"
"Why spiest thou on me?"
So thus did I to her reply:
"Art thou Mantispidae?"

"I am" she said, "for I have fed
"When young, on spider's eggs,
"But now, instead, for daily bread,
"Gnats catch I with my legs-
"My claws embedded 'til they're dead-
"With mantid spine-like pegs."

So I was right on yester night
She was a mantis-fly-
Mantispid slight, mantispid wight,
That reached toward the sky
And, in my sight, her eyes quite bright,
Prayed to the Lord on high!

D. K. McE. Kevan, (7 XII 1988)

There are few poetic references to Neuroptera. The only one in English that has come to hand is the following, published in the United States before 1890.

From: Song for the Season

Look high, look high, there's a lace-winged fly,
Thinking he's king of a fairy realm,
As he swings with delight on a gossamer tie,
That linked 'mid the boughs of the suntipp'd elm;

Eliza Cook (late 19th century)

There is a good deal of poetic licence in the above! The lacewing in question was scarcely likely to have taken much delight in the situation when the spider that spun the gossamer came after him! Perhaps that would be poetic justice in view of the habits of mantispids.

D. K. McE. Kevan,
MacDonald College

Contributions and correspondence regarding the Bulletin should be sent to the Bulletin Editor. / Faites parvenir vos contributions au Bulletin ou votre correspondance à l'Editeur du Bulletin

Inquiries about subscriptions and back issues should be sent to the Entomological Society of Canada, 1320 Carling Ave., Ottawa, Ont. K1Z 7K9. / Pour tout renseignement sur l'abonnement ou les numéros passés, prière de s'adresser à la Société d'entomologie du Canada, 1320 Ave. Carling, Ottawa, Ont. K1Z 7K9

THE DEADLINE FOR THE NEXT ISSUE, VOL. 21(3), IS JULY 15, 1989

LA DATE LIMITE POUR RECEVOIR VOS CONTRIBUTIONS POUR LE PROCHAIN NUMERO (VOL. 21(3)) EST LE 15 JUILLET 1989

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