

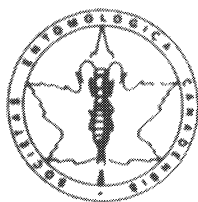
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ENTOMOLOGICAL SOCIETY OF CANADA

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# Bulletin

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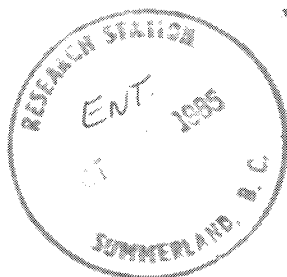
SOCIÉTÉ ENTOMOLOGIQUE DU CANADA

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Vol. 17

September-septembre 1985

No. 3



# Entomological Society of Canada Société Entomologique du Canada

## *Bulletin*

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## GUEST EDITORIAL

### Comments on the Canadian Congress of Biology

by  
Susan McIver\*

Eight hundred biologists from seven scientific societies gathered on the University of Western Ontario campus, London, Ontario June 23-28, 1985, to attend the first Canadian Congress of Biology sponsored by the Biological Council of Canada. The purpose of the Congress was to facilitate improvement of teaching and research in biology in Canada through the participation and communication of biologists in a multidisciplinary meeting. The intent of the BCC was that each society would hold its Annual Meeting during the week of the Congress and that there would be symposia and other activities of interest to specific societies as well as multidisciplinary endeavors. At the ESC meetings in Toronto, 1982, the Governing Board decided not to hold the Annual Meeting of the ESC at the Congress. Rather the ESC would participate in the Congress to the extent of sponsoring symposia, providing an information booth and the like, but would hold its Annual Meeting as usual in the early fall. This decision was confirmed by a telephone poll of board members in the summer of 1984 by President Ray Morris, and myself. The reasons for this decision included the dates of the Congress being in prime field season time, difficulties in synchronizing elections of officers, selection of award winners and similar activities with a June date, and the 'tepid enthusiasm' for the BCC by a number of ESC members.

For the past three years I have been a member of the BCC Executive, so have had the opportunity to follow closely the evolution of the Congress and as President, I was the official representative of the ESC at the Congress. From that perspective I would like to share my personal opinions with you.

The Congress came into existence with more than the usual pain associated with the organization of meetings. To be fair though, one must keep in mind the unique nature of the Congress, that is, there are fairly distinct guidelines for organizing Annual Meetings and International Congresses, but not for meetings such as the BCC Congress. The actual running of the Congress went smoothly from the point of view of the attendee and the beautiful campus along with lovely weather certainly helped the general ambience. The ESC sponsored symposia were successful and our booth was attractive and informative, however, attendance was very low. Out of the approximately 800 total registrants only 20 attended as ESC members. A larger number of individuals who belong to ESC were present, but these were people who normally participate in the Annual Meeting of the Canadian Society of Zoologists.

A highlight of the Congress for me was the multidisciplinary Congress symposia. These really did view a topic from many aspects and would be difficult for any one society to organize. Another high point was the plenary symposium, "Canada's Renewable Resources". The speakers included D. Low, Deputy Secretary, Ministry of Science and Technology, G. MacNabb, President NSERC, D. Wright, President, University of Waterloo, and R. Halstead, Director General of Institutes, Research Branch, Agriculture Canada. In this session the biologists of the country were exposed directly to the political aspects of science that determine the quantity as well as quality of our professional endeavors. If nothing else, one was made even more aware of the flaccid economic condition of Canadian biology.

The BCC is planning a second Congress in 1990. Whereas I think the decision to participate in but not hold our annual meeting at the London Congress was the wisest at the time, I also believe that for any future Congresses the ESC should opt either in or out all the way. At the last BCC meeting in April, 1985, serious consideration was being given to holding the 1990 meeting in August which would alleviate our problems of conflict with field season times and schedules of societal activities.

If a vote were called, I would cast my ballot for meeting with the Congress. The disadvantage of losing the close contact with a smaller more cohesive group is more than compensated for by the advantages of exposure to high level governmental decision makers, multidisciplinary activities and the informal opportunity to become acquainted with fellow biologists in other societies.

\*Chairman, Department of Environmental Biology, University of Guelph, Guelph, Ontario and President, Entomological Society of Canada.

## LETTERS TO THE EDITOR

The ESC Program Committee for the BCC Congress states:

"The Congress is a rare opportunity to see and hear first-hand what is happening in Canadian biology, and for that reason can contribute to the education of all biologists. Each Society has the opportunity to show to the others what is happening in their field in Canada."

Bull. ESC 17(1):26

Turning to page 29, I find that one of the two symposia organized by the committee offers no invited speakers from Canadian laboratories. Two of the four contributors are members of the ESC; the chairman works at a Canadian laboratory but is not a member of ESC (December 1983 Membership List). No doubt these well-known scientists from the U.S.A. will make excellent presentations. However, it is absurd for the ESC Committee to suggest that the pheromone symposium will provide a showcase for ESC or Canadian entomological science.

Robert J. Lamb  
Agriculture Canada  
Winnipeg

The present rules for the selection of Fellows of the Society requires that candidates must first be nominated by four peers. Nomination papers are sent to a selection committee who consider all nominations from every field across this large country. The selection committee consists of three people picked from the current list of Fellows and elected to the position by the Society. The objective of appointing Fellows, I believe, is to identify those members of our society who have outstanding records of accomplishment and are leading members of the scientific community. This is useful in that people outside of the Society will have a means of recognizing the leading scientists and the scientists, themselves, will have supporting documentation for personal advancement.

After thinking about the selection process for a number of years, I am wondering if we are accomplishing our objectives. Is there, perhaps, a better way of selecting Fellows which will enhance the prestige of the appointment and, at the same time, make the selection process more objective? I believe there is.

Even though committee members try to be as objective as possible there is always some risk of bias in selection. For example, if two candidates had roughly similar qualifications but only one of them was known to the selection committee, there is always the tendency to play it safe and go with the well-known candidate. Similarly, we are all very proud of our own work and believe our own field of interest is extremely important and may perhaps evaluate it at a little higher level than some other less-familiar field of interest. However, I think the bias most people worry about with such a system is that friends tend to recommend friends and it becomes an "Old Pal's Club" and, as such, can lose a lot of respect.

I am not trying to imply that any person or group of persons have done a poor job in the past on the selection committee. In fact, I think they have done a remarkably good job working within the guidelines provided. The important criterion here is that the system must *appear* to be unbiased. From the public's point of view, the system must be set up such that even the possibility of a bias occurring is minimized.

The Chemical Institute of Canada has had a system since 1957, which may be worth considering. They set up standards which must be met before a person can become a fellow. Points are given in five categories: degrees and honors, membership in professional organizations, experience and status, publications, patents and copyrights, and statements of sponsors. A different weighting is assigned to each category with "Experience and status" being the most important, and also the most subjective. A person probably has to score fairly high in four of the five categories before he can accumulate enough points to qualify. A Board of Qualification Examiners passes judgement on who meets the standards and becomes a fellow.

I suggest that perhaps we should re-examine our system of selecting fellows. We may not want to adopt the CIC system directly, but the use of standards may be useful and make the selection committee's job easier. Before going to the national executive, some feedback from the membership may be useful. Please send comments to the Bulletin or directly to myself.

Roy F. Shepherd  
1287 Queensbury Ave.  
Victoria, B.C.  
V8P 2E1

I think that entomologists in Western Canada should be made aware of the fact that the book "Insects Harmful to Forest Trees" (Author: René Martineau, Multiscience Publishing Ltd.) should be titled "Insects Harmful to Eastern Forest Trees," since not even major insect pests of western forests are covered. The advertising brochure is misleading, as is the title of the book. I hope that this is due to an oversight on the part of the author and/or publisher, rather than deliberate false advertising.

B. Staffan Lindgren  
Phero Tech Inc.,  
Vancouver, B.C.

## MID TERM REPORT FROM THE PRESIDENT

The Executive Council held its mid-term meeting in Ottawa on 23-24 April, 1985. The Science Policy Committee met on 22 April before the Executive Council meeting and the Biological Survey of Canada (Terrestrial Arthropods) met afterwards on 25 and 26 April. A number of developments arising from the committees as well as other recent items will be of interest to members.

The proposal, "The Economics of Insect Control in Wheat, Canola and Corn in Canada" was funded by Agriculture Canada. The Study Team and the Scientific Committee met in January 1985 to draft the terms of reference for the study, to determine the roles of the Team and Committee, and to develop plans for collecting, analyzing and preparing the data of the study for publication. Steady progress is being made by the Study Team. The Team and Committee will meet again at the 1985 ESC Annual Meeting in Ottawa.

It is a pleasure to inform members that the Society's application to NSERC for a grant to assist our publications was funded for a two year period at \$32,000 per annum.

This past year saw the completion of two common names lists of insects in Canada. "Nomenclatura insectorum canadensium" which was commissioned by The Quebec Society for the Protection of Plants and prepared by Paul Benoit, is an update of the 1975 list called "French Names of Insects in Canada." W. Y. Watson, Chairperson of the ESC Insect Common Names and Cultures Committees submitted the completed list of "English Common Names of Insects and Other Pests". The ESC and QSPP are exploring ways in which to publish the two lists together.

The President wrote to Thomas Siddon, Minister of State for Science and Technology, emphasizing the critical state of funding for basic science in this country and the absolute necessity for maintaining a vigorous core of such endeavor. The President and First Vice President expressed the concern of the ESC about program cuts in the Canadian Wildlife Service to Suzanne Blais-Grenier, Minister of the Environment.

Ms. Barbara Patterson was appointed Managing Editor in December 1984 and, as anticipated, has been doing a superb job. See the June 1985 Bulletin for a picture and introduction to Barbara as well as to Mary Lawson, a part-time clerk for the Society for the past seven years.

The Scientific Editor, Stephen Smith, and the Assistant Scientific Editor, Roger Downer, resigned as of 31 July 1985. On behalf of the Society the President thanked them for their greatly appreciated service. Douglas Craig agreed to chair the Search Committee to find new Scientific and Assistant Scientific Editors.

E. C. Becker, Treasurer, reviewed the 1984 audited financial statement for the Society. Total revenue, including \$36,875 interest on investment, was \$336,417 while expenditures were \$327,721, for a surplus of \$45,571. The 1984 financial statement, but not the budget, has been published in ESC Bulletin, vol. 17(2), along with the Balance Sheet of the Scholarship Fund showing a balance in capital fund of \$45,022.

The Finance Committee met on 21 February 1985 and submitted a report that included the following items. A file of information for use by an acting treasurer in an emergency has been compiled and placed in the Society's office. A microcomputer system has been installed in the Society's office. The committee recommends that someone with computer expertise be hired to assist the staff in learning the system. The 1985 budget as approved by the Governing Board in October 1984 was reviewed. A small deficit is forecast resulting from additional items budgeted by the Board and a more accurate estimate of printing costs for The Canadian Entomologist. The Committee recommended that moneys for improvement of the scientific program to Regional Societies should be raised from \$1000 to \$1500, that general "seed moneys" advanced by the ESC should be raised from \$1500 to \$2500, and that Regional Societies be advised that any unspent funds should be donated to the ESC Scholarship Fund. The committee reviewed a proposal by Elsevier Publishing Co. to publish the Canadian

Entomologist and concluded that the negative aspects of the proposal far exceeded the positive ones. The committee recommended against a reduction in page charges for the Canadian Entomologist because any significant reduction would require an increase in membership and/or subscription charges.

The Executive was advised by Donald Bright that plans for the 1985 annual meetings at Ottawa, Ontario, were on schedule. The theme for the meeting is "Entomology on the Northern Horizon". The Entomological Society of Ontario is sponsoring a President's Prize for the best student paper. A formal announcement of the meeting, with information on lodging, registration and a call for submitted papers was sent to members in May. Anne Hudson is in charge of the Scientific Program and P. T. Dang of Local Arrangements.

The 1986 annual meeting will be hosted by the Entomological Society of Manitoba. Neill Holliday is the Chairperson and Terry Galloway is the representative to the Board. George Gerber is in charge of the Scientific Program and John Conroy of Local Arrangements.

The ESC participated in the Canadian Congress of Biology sponsored by the BCC, at London, Ontario, 23-28 June 1985. Dr. G. B. Wiggins was the ESC representative to the Congress Steering Committee. He and Dr. W. G. Friend organized two societal symposia, "The Biological Survey of Canada: Terrestrial Arthropods" and "Pheromones: Their Role in Insect Behaviour Control". A. D. Tomlin was responsible for the ESC booth in the registration area and local arrangement. Alan developed an excellent pamphlet on the ESC which was distributed at the Congress and can be used for promotional activities for several years to come. The attendance of ESC members was low. The loan given by ESC to the BCC for "up front operating funds" was returned at the Congress. As suggested in 1984 by the Executive, the ESC should evaluate the success of having two major Entomological meetings in the same year, especially in view of the probability of the BCC Congresses being held at five-year intervals and the International Congress of Entomology in 1988.

Members of the original Steering Committee have agreed to serve on the Organizing Committee for the 18th International Congress of Entomology to be held on the UBC campus, July 3-9, 1988. The Society has confidence that G. G. C. Scudder (Chairperson), J. N. McNeill, I. M. Smith, S. R. Loschiavo, G. E. Ball, and K. G. Davey will organize an excellent Congress. At present, topics for general symposia are being considered. The Executive recommended that legal advice be obtained in regard to incorporation of the Congress to absolve the ESC of any liability and that information be obtained about insurance against large scale events, such as strikes by major airlines, that might affect the financial state of the Congress.

Under the chairmanship of First Vice-President, H. F. Madsen, the Science Policy Committee met on 22 April 1985. The Microbial Insecticides Study Committee, chaired by O. N. Morris has completed the first draft of the final report. The SPC thanks the Committee members for their efforts and recommends that the report be published in its entirety. A report on Biological Control of Insect Pests and Noxious Weeds was received from John Laing. The report recommended that an Expert Committee on the subject be established. The SPC and ESC Executive asked Bob Jacques to make a representation for the establishment of such a committee at a high-level Agriculture Canada Pest Management Workshop held in May, 1985. Stuart Hill reported the results of a survey conducted at the 1984 ESC annual meeting and designed to identify and assess those things that need to be done to ensure the healthy development of entomology. The results will appear in the Bulletin.

As a member of the Executive of BCC, I reported to the Science Policy Committee the following items of interest.

- a) Pursuant to the publication of a Directory of Canadian Field Research Stations, a BCC committee prepared the document. A Policy for Biological Field Research Stations in Canada. The policy is intended to serve those who use research stations and those who make decisions about their future, in particular NSERC whose infrastructure grants have proved vital to the survival of some facilities.
- b) Robin South and Louis Lapierre retired as President and Secretary, respectively. Ralph Nursall is the new President and Clarence Madosingh the Secretary. John McNeill was elected Vice President.
- c) D. C. Eidt was the ESC representative on a BCC Committee chaired by Taylor Steeves that prepared "A Commentary" on the report, "Canada's Threatened Forests", published by Science Council. The Commentary endorses the Science Council statement and further recommends immediate increase in resources for forest management and research activity.

The Scientific Committee, chaired by G. G. C. Scudder, of the Biological Survey of Canada (Terrestrial Arthropods) with Secretariat H. V. Danks, met 25-26 October 1984 and 25-26 April 1985. This high profile group continues to attract attention and recognition and to pursue its excellent work. Progress was reported on a wide variety of projects including preparation of illustrated keys to the families of arthropods in Canada and of a publication

characterizing the insect fauna of the Yukon, continuations of faunistic studies of grasslands, springs, soils, and wetlands. Other items discussed at the meetings were: establishment of publication policies and a suitable Trust Fund, day-to-day coordination and information exchange through the Secretariat, appraisal and impact assessment of environmental disturbance, and liaison with other organizations. The BSC urged the President to write to Kenneth Hare, Chairperson, Canadian Climate Planning Board, drawing to his attention the biological and agricultural implications of rising levels of atmospheric carbon dioxide. The Planning Board agreed to co-sponsor with the ESC a Workshop on this topic. As the topic involves all living organisms, not just insects, the BCC was approached to determine if that organization would be willing to sponsor the Workshop. At the BCC Congress in London, Ralph Nursall, President, BCC agreed to contact the constituent Societies concerning their interest in such a Workshop.

R. M. Warren, President and Chief Officer of Canada Post Corporation advised the Past President in May that the Society's suggestion that the Corporation issue one or more commemorative stamps depicting Canadian insects was not included in the 1985 stamp program and that the Society's request will be brought again to the Honourable R. J. Marin, Chairperson of the Stamp Advisory Committee.

I represented the Entomological Society of Canada at the Annual Meeting of the Entomological Society of America in San Antonio, December 9-13, 1984 and at the Canadian Congress of Biology in London, June 23-28, 1985. Past President R. F. Morris was our representative at the Acadian Entomological Society Annual Meeting, August 5-8, 1985 in St. John's. Regional Director T.D. Galloway represented the ESC at the Annual Meeting of the Entomological Society of Manitoba in Winnipeg, November 8-9, 1984; Regional Director J. S. Kelleher at the Annual Meeting of the Entomological Society of Ontario in Chalk River, September 13-15, 1984; Regional Director P. W. Riegert at the Annual Meeting of the Entomological Society of Saskatchewan in Saskatoon, November 1-2, 1984; Regional Director, D. A. Craig at the Annual Meeting of the Entomological Society of Alberta in Calgary, November 1-3, 1984; and Regional Director R. Cannings at the Annual Meeting of the Entomological Society of British Columbia in Vancouver, October 25-26, 1984.

Since the Annual Meeting in October 1984, some projects have been completed and progress made on others, some new initiatives have been taken, and routine administrative matters, including correspondence, are receiving the required attention.

Susan B. McIver  
President, ESC

## **35TH ANNUAL GENERAL MEETING**

The Annual General Meeting of the Entomological Society of Canada will be held Tuesday, September 24, 1985 at 3:45 p.m. at the Skyline Hotel, Ottawa.

Matters for the consideration of this meeting or of the Governing Board meeting, to be held on September 21 and 22, 1985 at Ottawa, should be sent to the Secretary, Dr. J. A. Shemanchuk, Research Station, Agriculture Canada, Lethbridge, Alberta T1J 4B1.

La Réunion Annuelle d'Affaires de la Société Entomologique du Canada aura lieu le mardi, 24 Septembre 1985, dans l'Hôtel Skyline, Ottawa. Ceux qui desiront soumettre des propositions pour cette Réunion ou au Conseil de Direction, voudront bien les envoyer à l'adresse donnée plus haut.

## **COMMITTEES**

### **Gold Medal and Hewitt Awards**

The June issue of the Bulletin carried the call for nominations for the Gold Medal and the C. Gordon Hewitt Awards. Over the past few years, the Achievement Awards Committee has noted that there are very few put forward for these awards. Unfortunately, this trend continues. All members are urged to immediately consider the possibility of nominations this year. There must be many worthy of consideration, but they need your efforts on their behalf.

G. G. E. Scudder  
2nd Vice-President  
Entomological Society of Canada

### **Report of the Achievement Awards Committee**

The Achievement Awards Committee received 2 nominations for the 1985 Gold Medal and 5 for the C. Gordon Hewitt Award. After consideration of all eligible nominees, the Committee recommended that Dr. R. N. Sinha receive the Gold Medal and Dr. M. L. Winston the Hewitt Award. These recommendations were approved by the Executive at the mid-term meeting in Ottawa, April 23-24, 1985.

Bibliographical sketches of Drs. Sinha and Winston were prepared for the September issue of the Bulletin, and for brochures to be distributed at the Annual Meeting in Ottawa, September 23-25, 1985.

Press releases were prepared and sent to the editors of scientific publications, publicity offices and to local news media.

A call for nominations for the 1986 Gold Medal and C. Gordon Hewitt Awards was placed in the June issue of the Bulletin. A second short note calling for nominations was also placed in the September issue.

G. G. E. Scudder  
Committee Chairman

### **Report of the Elections Committee**

The Elections Committee consisted of G. K. Morris (Chairperson), R. B. Aiken (substituted for F. M. Barrett) and Dave Gibo. It met August 6, 1985 and examined ballots for the 1985 election of officers. Ballots cast 382. The successful candidates were:

Second Vice-President: E. C. Becker

Directors at Large: R. H. Gooding and L. S. Thompson

Fellowship Selection Committees: D. G. Harcourt and D. C. Eidt

The Election Committee hereby certifies that all of the ballots were accurately counted and that the results are correct.

G. K. Morris  
Committee Chairman

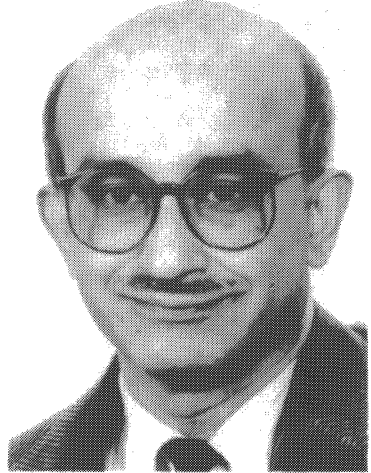


## AWARDS

### R. N. Sinha, Gold Medal Recipient

The 1985 recipient of the Entomological Society of Canada's Gold Medal for outstanding achievement in Canadian entomology is Dr. Ranendra Nath Sinha, Agriculture Canada Research Station, Winnipeg. In presenting this award, the Society recognizes his important contributions in stored-product entomology, acarology and ecology in Canada.

Dr. Sinha was born in India in 1930 where he took his early education and emigrated to Canada in 1956. He received his B.Sc. (Honours) degree in Zoology and Comparative Anatomy from the University of Calcutta. He earned his Ph.D. in Entomology at the University of Kansas under Professor C. D. Michener, with Graduate and Stevenson Scholarship support. Following this, Dr. Sinha was a National Research Council Post-doctorate Fellow at McGill University. Since 1957 he has been at the Agriculture Canada Research Station in Winnipeg, where he is now a Principal Research Scientist, and Honorary Research Professor at the University of Manitoba.



Dr. Sinha's research in the fields of stored-product entomology, acarology and ecology have resulted in 150 published papers in scientific journals and books, and 49 miscellaneous publications and reports. In 1965, he published a comprehensive manual on "Insects Associated with Stored Products in Canada" and this is now used as a guide in Canada, the United Kingdom, Japan and other countries. In 1973 he coedited a book "Grain Storage — Part of a System" published by Avi Publishing Co., Westport, Conn., USA with W. E. Muir, writing the key chapter on the "Interrelations of Physical, Chemical, and Biological Variables in the Deterioration of Stored Grains." With F. L. Watters, he has recently coauthored a reference book "Insect Pests of Flour Mills, Grain Elevators, and Feed Mills and their Control" published by the Government of Canada, Ottawa.

Dr. Sinha gained his international reputation in the fields of stored-product entomology, acarology and ecology during the past 27 years through his many outstanding studies designed to elucidate the basic mechanisms responsible for the deterioration of grain and oilseed crops in storage on farms in Canada and the nature of the stored-product ecosystem. By using a systems-oriented, multidisciplinary approach and multivariate analytical techniques, he and his associates have been able to analyze and identify the interrelations and pathways that initiate and accelerate the deteriorative processes in bulks of grains and oilseeds leading to creation of "hot spots", insect outbreaks and mycotoxin production.

One of the most challenging problems in stored-product entomology has been to develop a universally acceptable and scientifically valid criterion for assessment of loss in stored grain and its products. Since 1976, Dr. Sinha and his group solved this problem by constructing individual energy budgets of all life stages of eight major stored-product insect pest species; one such energy budget formed the basis of developing computer simulated loss prediction models for stored grain loss by rice weevil in Australia.

He has used the results from this extensive research to develop pest management systems for stored grain and oilseeds which utilize holistic approaches. These pest management systems include methods for forecasting the outbreaks of insects, mites, and microorganisms and measures for preventing outbreaks which include the cooling and drying of grain in farm storage bins by forced ventilation and the use of pesticides to treat the bins and stored seeds. As a result of his work, the Canadian grain industry saves millions of dollars annually by taking the appropriate measures to prevent losses that would result from outbreaks of insects, mites and microorganisms.

In 1967-71, in cooperation with 10 major grain elevator companies, Dr. Sinha organized two comprehensive surveys in western Canada involving 3000 elevator agents in 41 crop districts to collect data on the incidence of insect and mite infestations. He used these data to develop a hypothesis that relates the incidence of insect and mite infestations and the occurrence of molds in stored grain to climate. The data were then used to develop mathematical models for predicting outbreaks of stored-grain pests in the Prairie Provinces. Similar

models and the multivariate, deductive approaches that he used in his pioneering studies on bulk grain ecosystems to reveal the causes of stored-grain spoilage are now being used by stored-grain researchers and workers in France, England, Australia, India, U.S.S.R., Israel, U.S.A., and other countries around the world.

Because of his international reputation in the areas of stored-product entomology, acarology, and ecology, Dr. Sinha has been consulted by governments of various countries on storage of grains and oilseeds. Much of Dr. Sinha's research has been extensively incorporated into widely used textbooks.

Dr. Sinha has been an active member of national and international scientific societies. At present, he is a member of the Ecological Society of America, Society for Population Ecology, Professional Institute of the Public Service of Canada, Sigma Xi, Entomological Society of America, Entomological Society of Manitoba, Acarological Society of America (founding member), and the Statistical Society of Manitoba. In 1973-74, he was President of the Entomological Society of Manitoba. In 1978, he was President of the Statistical Society of Manitoba. In addition, Dr. Sinha is an honorary life member of the University of Kansas Y.M.C.A. He has taught Indian philosophy and yoga at the University of Manitoba for 10 years and wrote a book on yoga in 1975.

Dr. Sinha is on the editorial board of the *Journal of Stored Products Research* (U.K.), *Sciences des Aliments* (France), and *Experimental and Applied Acarology* (The Netherlands). He teaches at the Departments of Entomology and Agricultural Engineering, University of Manitoba and has received operating and strategic grants from N.R.C. and N.S.E.R.C. for training students and for stored-product research.

The Society is pleased to present Dr. Sinha the Gold Medal for Outstanding Achievements in Canadian Entomology on September 23, 1985 at the Annual Meeting, in Ottawa, and extends best wishes for continued success in the future.

### **Mark L. Winston, Hewitt Award Winner**

The 1985 recipient of the Entomological Society of Canada's C. Gordon Hewitt Award for outstanding achievement in Canadian Entomology by an individual less than 40 years old is Dr. Mark L. Winston, Associate Professor of Biological Sciences, Simon Fraser University.

Mark L. Winston was born in New York in 1950. He received his B.Sc. in Biology from Boston University in 1971, and M.Sc. in Marine Biology from the same University in 1975. He earned his Ph.D. in Entomology in 1978 at the University of Kansas under Professor O.R. Taylor. After this he received NSF Postdoctoral Fellowship support at the University of Kansas, and served as a consultant on Africanized Bee Management for the Ministries of Agriculture in Trinidad and Tobago, Guatemala, Mexico and Panama. In 1979-80, Dr. Winston was a Visiting Assistant Professor at Idaho State University. He joined the faculty of Simon Fraser University in 1980, where he is now an Associate Professor of Biological Sciences.

Dr. Winston's research ranges broadly in the field of Apiculture, focusing in particular on basic aspects of honey bee behaviour, reproduction and demography in both temperate and tropical regions, on pheromones of honey bees and their wax moth pests, on sublethal effects of pesticides on honey bees, and on the biology of native and domestic bees as pollinators. In addition he is actively engaged in developing a package bee industry in British Columbia. His research to date has resulted in 40 publications in refereed journals, and one chapter in an edited book.

Dr. Winston's research on the systematics and behaviour of social bees has resulted in a reclassification of the stingless bees (Meliponinae) and honey bees (Apinae) into 2 sister groups. This result was significant in demonstrating that highly social behaviour evolved twice in bees, rather than the single origin previously assumed. His research on the life history of temperate and tropical honey bee races has demonstrated a broad range of social, behavioural, and ecological differences between these groups. This is the first such body of work comparing races of the same social insect species in which genetically-based and environmental components have been analyzed. These studies have also provided insights



into the reasons behind the phenomenal success of Africanized bees ("killer bees") introduced to South America, and have proven valuable in control and management programs for these bees. His study showing that colony population and genetic differences between worker honey bees of different races influence temporal division of labour was the first demonstration of the factors which determine temporal caste structure in social insects.

Collaborative investigations on pheromones of honey bees have shown that ambiguous results by other workers with the queen-produced pheromone 9-hydroxy-decenoic acid were due to the chiral nature of this compound. The sex pheromone of the bumble bee wax moth, *Vitula edmansae* has been identified and shown to be effective in trapping and monitoring this major pest of bee hives in western Canada.

Dr. Winston's applied research in honey bee biology and management has led to a more precise and effective management against swarming by beekeepers, and the development of a new and sensitive bioassay for sublethal pesticide impact on pollinators.

Dr. Winston excels in graduate and undergraduate teaching, and has developed new courses at S.F.U. on the biology of bees, beekeeping, and social insects. He is currently writing a book on "The Social Behaviour of the Honey Bee," which will be published by Harvard University Press.

He is an active member of the Entomological Society of America, Entomological Society of Canada, Kansas Entomological Society, Entomological Society of British Columbia, Sigma Xi, International Union for the Study of Social Insects, International Bee Research Association, Canadian Association of Professional Apiculturists, and American Association of Professional Apiculturists.

In recognition of his outstanding contributions to Canadian Entomology, the Entomological Society of Canada is pleased to present Dr. Mark L. Winston the C. Gordon Hewitt Award for 1985 at the Annual Meeting in Ottawa on September 23, and extends best wishes for continued success in the future.

## **BIOLOGICAL SURVEY OF CANADA (TERRESTRIAL ARTHROPODS)**

### **Survey Report**

The Scientific Committee met in Ottawa on April 25-26, 1985. Some highlights are summarized below. A fuller account of the meeting appears in the fall 1985 issue of the Newsletter of the Biological Survey of Canada (Terrestrial Arthropods).

#### *Notes on selected scientific projects*

1. Arthropod fauna of the Yukon. The draft contents of a major book on the Yukon were approved.
2. Arthropods of Canadian Grasslands. A 1985 edition (no. 3) of the Grasslands Newsletter is now available.
3. Aquatic insects of freshwater wetlands. Proceedings of the 1984 conference on the aquatic insects of peatlands and marshes in Canada are being edited, and will be sent to press during 1985.
4. Arthropods of freshwater springs in Canada. An international bibliography of springs has been prepared and will be published as soon as possible.
5. Arthropod fauna of soils. The proceedings of the 1984 international conference on faunal influences on soil structure are being edited, and will be published in *Quaestiones entomologicae*. Interest in Canadian soils and their conservation is increasing.

#### *Other scientific priorities*

1. Climatic change. The Committee took initiatives that led to a proposal by the Climate Planning Board for a workshop on climatic change. Through the Biological Council of Canada, the Committee is endeavouring to obtain wide biological involvement to allow such a workshop.
2. Insects of peatlands. Dr. S. A. Marshall is evaluating ideas for a project on the arthropod fauna of peatlands, including terrestrial species and perhaps also the plants. If there is sufficient interest, studies supported by cooperative fieldwork, standard sampling methods, and exchange of specimens will allow a synthetic publication on peatland fauna within a few years.
3. General priorities. A summary of existing projects will be prepared so that the current priorities of the Survey can be evaluated as a whole.

### *Expansion of the Biological Survey of Canada*

The Committee approved a document (as an appendix to the document on expansion prepared earlier) on the form that actual additional survey modules, dealing with groups other than terrestrial arthropods, might take.

### *Information and liaison with other organizations*

1. Biological Surveys and related matters. The Survey is in contact with representatives of the Association of Systematics Collections concerning their May 1985 "Community hearings on a national Biological Survey", and with the International Advisory Committee on Biosystematics Services in Entomology.
2. CCEA and COSEWIC. The Committee heard a summary of the activities of the Canadian Council on Ecological Areas and the Committee on the Status of Endangered Wildlife in Canada from the Secretary of both organizations. The common interests of CCEA and COSEWIC with the Biological Survey were recognized, and the Survey proposed to communicate further with them.
3. Biological Council of Canada. The Committee also discussed the 1985 Canadian Congress of Biology (reported on elsewhere).

### *Other items*

1. Publications of the Biological Survey of Canada. The publication of survey products (including several manuscripts available or soon to be available) was considered in relation to information received from the National Museum of Natural Sciences. The publications subcommittee was authorized to take appropriate actions to secure funds and establish a Survey Trust Fund to support publication.
2. Dissemination of Survey publications. The Survey had made numerous suggestions to the ESC since 1980 on how to market the Survey's book *Arctic Arthropods*, produced by the Society. The suggestions had not been acted upon, but the Society had decided in 1985 to transfer responsibility for marketing to the Survey, which discussed how to do this. In the first instance, certain potential sales agents would be approached.

H. V. Danks,  
Biological Survey of Canada  
Ottawa

## ARTICLE

### **A Historical Perspective of Articles Published in the Canadian Entomologist 1968-1984**

by

**A. C. Hodson\***

Articles published in the *Canadian Entomologist* were examined year by year from 1868 to 1984. They were recorded in six categories, systematics and morphology; physiology and toxicology; biology and ecology; medical entomology and insect pathology; and economic entomology.

In the table the range in numbers of papers, the average number and percentage in each category are presented by decades with the exception of 1978-1984. The most striking changes have involved the first three categories with systematics and morphology having less than a third as many articles as were published earlier.

The articles tallied do not include many brief notes, letters to the editor, obituaries and book reviews, although some that seemed to be a significant contribution were included. The percentages do not add up to 100 because many articles were recorded in more than one category.

In 1920 the *Canadian Entomologist* contained a survey in which categories of articles published in the *Canadian Entomologist* were compared with those published in seven other entomological journals. This survey was prepared by Harry B. Weiss and was entitled "The Contents of Our Entomological Journals During 1919." It is to be found in Volume 52, pages 169-173. His selection of categories was similar but enough different from those used in my survey to make a direct comparison difficult. As would be expected, he has by far the highest percentage of articles dealing with systematics and morphology published during 1919 with the exception of the *Journal of Economic Entomology*.

\*Department of Entomology, University of Minnesota

### Categories Recorded by Decades

	<i>Systematics and Morphology</i>	<i>Physiology and Toxicology</i>	<i>Biology and Ecology</i>	<i>Medical and Entomology Insect Pathology</i>	<i>Economic Entomology</i>
<b>1868-1877</b>					
Range .....	25-64	0-2	5-19	0-1	0-4
Average .....	44.1	0.2	9.2	0.1	1.4
Percentage .....	80.0	0.4	17.0	0.2	3.0
<b>1878-1887</b>					
Range .....	43-57	0-2	6-17	0-1	0-6
Average .....	51.6	0.8	11.7	0.1	2.3
Percentage .....	78.0	1.0	18.0	0.2	4.0
<b>1888-1897</b>					
Range .....	52-72	0-1	8-24	0	0-4
Average .....	61.4	0.7	15.1	0	1.6
Percentage .....	78.0	1.0	19.0	0	2.0
<b>1898-1907</b>					
Range .....	70-83	0-2	8-24	0-4	0-6
Average .....	78.0	0.9	13.6	0.6	2.8
Percentage .....	81.0	1.1	14.0	0.6	3.0
<b>1908-1917</b>					
Range .....	60-91	0-3	6-17	0-2	0-11
Average .....	74.0	2.0	13.0	0.9	4.1
Percentage .....	79.0	2.0	14.0	1.0	4.0
<b>1918-1927</b>					
Range .....	50-69	0-3	10-18	0-1	0-3
Average .....	62.9	0.7	13.3	0.2	3.1
Percentage .....	78.0	1.0	17.0	0.2	4.0
<b>1928-1937</b>					
Range .....	49-58	0-2	7-18	0-2	2-11
Average .....	53.5	0.7	11.8	0.9	3.5
Percentage .....	76.0	1.0	17.0	1.0	5.0
<b>1938-1947</b>					
Range .....	6-41	0-14	5-33	0-8	2-13
Average .....	32.4	6.8	19.6	3.3	7.6
Percentage .....	47.0	10.0	28.0	5.0	11.1
<b>1948-1957</b>					
Range .....	6-54	3-14	5-33	0-8	0-13
Average .....	32.4	8.2	18.1	3.3	8.4
Percentage .....	46.0	12.0	26.0	5.0	11.0
<b>1958-1967</b>					
Range .....	46-75	12-32	44-67	3-10	9-22
Average .....	60.4	21.1	57.3	4.8	16.9
Percentage .....	38.0	13.0	36.0	3.0	10.0
<b>1968-1977</b>					
Range .....	39-80	26-47	50-86	5-12	17-35
Average .....	62.3	37.2	61.5	8.0	26.6
Percentage .....	32.0	19.0	31.0	4.0	14.0
<b>1978-1984</b>					
Range .....	32-56	19-38	50-77	5-10	25-32
Average .....	44.7	21.9	43.9	8.0	26.4
Percentage .....	31.0	15.0	30.0	6.0	18.0

## NEWS OF ORGANIZATIONS

### Biological Council of Canada: Conseil Canadien de Biologie President's Report, 1984-1985

I intend to report regularly to BCC member societies through their bulletins or newsletters. This report is written immediately following the First Canadian Congress of Biology at the University of Western Ontario, London, 23-29 June, 1985. The Congress has taken the bulk of our attention this spring and summer, so this report will be mostly concerned with it.

About 780 people registered for the Congress. Four member societies (Canadian Botanical Association, Canadian Phytopathological Society, Canadian Society of Zoologists, Genetics Society of Canada) took advantage of the Congress to hold their annual general meetings at it. The Entomological Society of Canada and our colleagues of the Canadian Society of Microbiologists, who have recently become observers at the BCC, each held significant sets of meetings.

Each of us who attended the Congress will have his own opinion of its success, but the general impression that I carried away was that the meetings had worked well, despite the occasional gaffe or imperfection in the program. Let me try to capture some of the feeling and sense of the Congress, by reporting or paraphrasing what I said at different public occasions at which I spoke.

At the opening session:

"The substance of our careers is the experiment and the publication and wider testing of its results. Today we begin the first Canadian Congress of Biology — an experiment of the Biological Council of Canada. You are the ones, who in your numbers and responses, will determine how significant the experiment will have been.

This experiment is based on the hypothesis that biologists of varied backgrounds and interests should have the opportunity to meet together, periodically, to share ideas, to compare ends and means and to build their sense of community.

The experiment of the Congress was approved by the BCC in 1980. The protocols were set up within a year and the University of Western Ontario chosen as laboratory.

An organizing committee was established under the chairmanship of David B. Walden, Department of Plant Sciences, University of Western Ontario. The committee represents all seven member societies of the BCC plus the Canadian Society of Microbiologists.

The BCC is made up of 7 biological organizations and has 3 observer societies attached. Thus it represents more than 4000 professional biologists in government, industry and the universities. The BCC serves to carry the opinions and interests of this large and important segment of Canadian science to the ministries and agencies that legislate our activities and control our resources. This is done by means of briefs, publications, symposia and direct communication with appropriate ministers, bureaucrats and officers. The Council itself, comprising chiefly representatives of member societies, directs these activities. In other words, the BCC can be used as your collective political voice.

But we are a free association of societies and never before have taken the opportunity to meet together in this way. There has been no requirement that member societies participate in this Congress. Some have not been able to, because of previous commitments. There is no requirement that participating societies be members of BCC. We are particularly pleased to see our colleagues of the Canadian Society of Microbiologists taking advantage of this Congress.

We shall expect to hear the reactions of the societies to the Congress. If you are having your annual general meeting here, I hope you will use the occasion to evaluate this sort of gathering of societies. You see, tentatively we plan a Second Congress to be held at l'Universite Laval, from 20-25 August, 1990. How shall we put the lessons learnt here to good use in planning it?

The results of any experiment, if it is a good one, will give rise to more questions than it answers, for our discoveries tell us most clearly what it is that we do not know.

I know that this is a good experiment. The Organizing Committee has worked long and hard and Congress Canada, our professional guides, have done incredibly well within the limits we put upon them. BCC is deeply grateful to the Congress sponsors, who are acknowledged in the program book. What more elegant, impressive or significant a location could we have chosen than the University of Western Ontario?

Malgré les renseignements de la brochure finale, le mot final appartient au président de conseil, qui dit à nos collègues francophones. 'Je vous souhaite bienvenue au premier congrès canadien de biologie. Faisons cette occasion le temps de la coopération et l'entente parmi collègues. Nous sommes un corps; nous marcherons en accord!' "

We were warmly welcomed to the University of Western Ontario by Acting President A. K. Adlington. The University proved to be a gracious and generous host. The success of the Congress depended on it to no small extent.

At the first plenary session: we were given the chance to hear the views of three pre-eminent practitioners of biology in Canada, David Mettrick (The BCC Gold Medal Award winner for 1985), Gordon MacLachlan and John Phillips. Each speaker, from his own vantage point, looked at Canadian biology in the past, as it is practised now and as it may be. Thus we saw our capacities, our possibilities and the problems we face. It was a good introduction to the second plenary session, two days later, where David Low, the Deputy Secretary of MOSST, Douglas Wright, President of the University of Waterloo and author of the report on Federal Policies and Programs for Technology Development, and Gordon MacNabb, President of NSERC, outlined the problems and prospects of science in Canada. The presence of these speakers emphasized the importance of BCC as a forum for the expression of opinion and announcement of policies and initiatives.

One of the most enjoyable tasks I had at the Congress was having the opportunity formally to return to member societies the loans they made willingly and generously when asked in 1984 to assist the Organizing Committee with its cash flow. That expression of interest and confidence in the BCC was much appreciated and enabled the Organizing Committee to proceed expeditiously with its arrangements. The presentation of the money was greeted with cheers by the CBA, CPS, ESC and GSC. Even the CSPP, which was unable to participate in the Congress owing to previous commitments contributed to our success and has been reimbursed by mail.

The BCC also got instructions for initiatives from its members. Council will express forceful opinions on matters of cuts to staff at NSERC, the National Museum of Natural Sciences and the Science Council of Canada. We shall comment soon on the new Five Year Plan of NSERC. There will be initiatives in regard to expansion of the Biological Survey of Canada, as well as the development of a workshop with the Climate Planning Board and the Atmospheric Environment Service to consider the impact of climatic change on animals and plants in Canada. Following the October meeting of the BCC, you can expect to hear more about these and other activities of Council.

J. R. Nursall, President  
The Biological Council of Canada  
Department of Zoology  
University of Alberta

## INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

Reference: ITZN 11/5 A.N.(S.)134

July 1985

The Commission hereby gives six months notice of the possible use of its plenary powers in the following case, published in the *Bulletin of Zoological Nomenclature*, volume 42, part 2 on 27 June 1985 and would welcome comments and advice on it from interested zoologists.

Correspondence should be addressed to the Secretary at the above address, if possible within six months of the date of publication of this notice.

### Case No.

2210 *Folsomia candida* Willem, 1902 (Insects, Collembola): proposed conservation by the suppression of *Entomobrya cavicola* Banks, 1897.

R. V. Melville (Secretary)  
c/o British Museum (Natural History)  
Cromwell Road  
London SW75BD  
England

## MEETING ANNOUNCEMENTS

*VII International Congress of Acarology*, in Bangalore, India on 3-9 August, 1986.

CONTACT: Dr. B. K. Nageshchandra, Department of Entomology, University of Agricultural Sciences, Bangalore 560 024, India.

*Western Forest Insect Work Conference*, at the Empress Hotel, Victoria, BC, on 3-6 March, 1986

CONTACT: Dr. Gordon Miller, Pacific Forest Research Centre, 506 West Burnside Road, Victoria, B.C. V8Z 1M5 Telephone (604) 388-0600

*Annual Meeting of the Entomological Society of British Columbia*, at the Pacific Forest Research Centre, Victoria, B.C., on 25 October 1985.

CONTACT: Dr. Gordon Miller, Pacific Forest Research Centre, 506 West Burnside Road, Victoria, B.C. V8Z 1M5 Telephone (604) 388-0600

*Annual Meeting, Société d'Entomologie du Québec*, at the Agriculture Canada Research Station, St-Jean-sur-Richelieu, Québec, on 6-7 November, 1985

CONTACT: Dr. P. Martel, Dr. G. Boivin or Dr. C. Vincent, Research Station Agriculture Canada, P.O. Box 457, St-Jean-sur-Richelieu, Québec, J3B 6Z8. Telephone (514) 346-4494

*Joint Annual Meeting of the Entomological Society of Canada and the Entomological Society of Manitoba*, 6-8 October 1986, Holiday Inn South Winnipeg, Winnipeg, Manitoba.

CONTACT: Dr. N. J. Holliday, General Chairman, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, R3T 2N2, or Dr. G. H. Gerber, Chairman, Scientific Program Committee, Research Station, Agriculture Canada, 195 Dafoe Road, Winnipeg, Manitoba, R3T 2M9.

*XVIII International Congress of Entomology*, at the University of British Columbia, Vancouver, B.C., on 3-9 July 1988.

CONTACT: Dr. G. G. E. Scudder, Secretary General, XVIII International Congress of Entomology, Department of Zoology, University of British Columbia, Vancouver, B.C. V6T 2A9. Telephone (604) 228-3168.

*Understanding the Gypsy Moth threat* — an information symposium. Sponsored by the British Columbia Plant Protection Advisory Council, 5 November, 1985 at Robson Square Media Centre, Vancouver, B.C.

CONTACT: Dr. Bob DeBoo, British Columbia Forest Service, 1450 Government St., Victoria, B.C., V8W 3E7. Phone: (604) 387-5695



## PUBLICATIONS

### Book Notices

King, R. C. and H. Akai, Editors. 1984. *Insect Ultrastructure 2*. Plenum Press, New York. XXV + 624 pp. hardcover US \$85.00.

Research on cell biology is occurring at record speed, and many of the results from studies on insects have helped in understanding some of the key problems in biology. At the same time, discoveries in the fields of genetics, developmental biology, biochemistry, and physiology have also contributed to progress in entomology by supplying functional interpretations for the intricate organization of various subcellular organelles in the specialized cells of insects.

The second volume of *Insect Ultrastructure* contains sixteen chapters prepared by twenty-four authors from eight different countries. Three general topics are covered: ultrastructure of developing cells, ultrastructure of the development, differentiation and functioning of specialized tissues and organs, and ultrastructure of cells in pathological states. The volume is amply illustrated with almost 500 text figures, most of which are high quality electron micrographs. The two volumes together comprise the most extensive ultrastructural atlas available for insect tissues and cells.

Entomologists, cell and developmental biologists as well as investigators in physiology, endocrinology, neurobiology and insect pathology will find *Insect Ultrastructure 2* a welcome addition to their libraries.

S. B. McIver  
Department of Environmental Biology  
University of Guelph  
Guelph, Ontario

Eva Crane and Penelope Walker, 1984 Pollination Directory for World Crops  
International Bee Research Association, Gerrards Cross, Bucks, England SL9 0NR, US \$20.00, 184 pages.

In recent years there has been increasing interest in pollination requirements of both temperate and tropical plants, and the International Bee Research Association has taken a leading role in organizing symposia and publications concerning pollination. The Pollination Directory of World Crops is an invaluable new reference to pollination of crops, with information on more than 400 plants. Each crop is listed under its common name, and entries summarize the type of plant, where it is cultivated, products, methods of propagation, reproductive characteristics, and pollination mechanisms and requirements. The references are a bit light, but do provide entry into the relevant scientific literature. The entries are concise and clearly written, and would be of interest to crop growers, agronomists, horticulturists, foresters, beekeepers, and researchers. I recommend this directory highly, particularly to those interested in food production in tropical countries, where pollination information previously has not been readily available.

Mark L. Winston  
Department of Biological Sciences  
Simon Fraser University  
Burnaby, B.C.  
V5A 1S6

## Book Review

Redborg, Kurt, E., and MacLeod, Ellis G. 1985. *The Developmental Ecology of Mantispa uhleri Banks (Neuroptera: Mantispidae)*. Illinois Biological Monographs, 53:(x) + 131 pp. (paperback). University of Illinois Press, Urbana and Chicago. (54 E. Gregory Drive, Champaign, IL. 61820) U.S. \$15.00.

This is essentially the Ph.D. thesis of the first author, and the first thing one might say after reading it is that it is a great pity that many equally worthy and well-presented doctoral theses are not carried forward to a comparably satisfactory conclusion. An unusual combination of circumstances seems to have occurred: the doctor and his supervisor have managed not only to sustain their own interest in their topic (so many theses get no further than the university library), but they also seem to have managed to find time and energy enough to persuade an enlightened university press, not only to publish, but also to advertise and market the final product. This latter is all the more surprising since the subject, fascinating though it undoubtedly is for a somewhat limited entomological clientele, is unlikely to make the work an overnight best-seller — though there has, admittedly, been of late, an increasing general interest in the Neuroptera.

The work is a detailed study of the biology and general ecology of a single species of Mantispidae, a widely distributed family, but not one that is particularly familiar to most of us for its members are never particularly abundant anywhere. (Incidentally the few species that occur in Canada do not, so far as I know, including the one treated, the distribution of which, by the way, is not given in the book!). The introduction is a fairly brief, but adequate, review of the literature on mantispid biology and ecology generally. It is concluded that "previous studies have been hampered by their reliance on happenstance observation . . .". The present work sets out to present a detailed study of a single species under controlled conditions.

Chapter 2 deals at length with laboratory culture methods for both *Mantispa uhleri* and for the spider egg-sacs within which the larvae feed. The various stages of *M. uhleri* are described and some aspects of their behaviour are discussed. Chapter 3 is entitled "Larval Strategies for Locating Spider-Egg Prey". Some information is given for *Mantispa viridis* or for *M. uhleri*. Data for additional species (including *M. interrupta*, which occurs in eastern Canada) are also summarized. Chapter 4 considers the subject of spider egg-sac penetration by mantispid larvae and reports on experiments relating to this. Chapter 5 is concerned with the "boarding" of the female spiders by the mantispid larvae. Chapter 6 discusses the movements of the first-instar larvae on the spiders (mostly *Lycosa* and *Phidippus*). Chapter 7 investigates the species of spiders involved (31 Lycosoidea and Clubionoidea, more belonging to the Salticidae than to any other family). Chapter 8 deals with the seasonal cycle of *M. uhleri* in Southern Illinois, but no information is given for any other part of the range of the species.

There is a short Summary (Chapter 9) with a brief addendum merely listing 9 recent references published too late to be in the text. The book concludes with two Appendices (on *M. uhleri*-spider associations for Southern Illinois, and the species of spiders utilized by first-instar *M. uhleri* larvae), a Literature list of 55 titles (including the 9 mentioned above) and an Index.

The type is clear and easily readable and there are few typographical errors. One minor error (probably the fault of the authors and not a misprint) appears on p. 59, where young crickets, used as food for spiders, are called *Acheta domestica* (*sic*) instead of *A. domesticus* (*Acheta* being masculine). For present times, the price is quite reasonable. The book should make a very worthwhile contribution to any entomology library, and it is a "must" for arachnologists, but its literary style (or lack of it) scarcely commends it to the amateur naturalist. It could equally as well (though probably at greater cost), have been published as a valuable series of papers in an appropriate entomological journal, but I, personally, should like to see more "monographs" of this kind and more signs of encouragement for their publication.

D. Keith McE. Kevan

Memoir 126: *A catalogue of the eggs of some Canadian Geometridae (Lepidoptera), with comments*. E. H. Salkeld. 1984. 271 pp. \$18.50 (\$13.50)

## **Half-Price Sale of Back Issues**

All available back issues of the first 100 volumes of the *Canadian Entomologist* (1868-1967) are on sale for one-half the regular price, that is, \$35/volume instead of \$70 (postage and handling extra). This offer will be valid for orders received on or before *31 May 1986*.

Take this opportunity to complete your series.

Send orders to the Entomological Society of Canada, 1320 Carling Avenue, Ottawa, Ontario K1Z 7K9, Canada.

## 1986 ANNUAL REVIEWS

### ANNUAL REVIEW OF ECOLOGY AND SYSTEMATICS

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