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# Entomological Society of Canada

## *Bulletin*

# Société Entomologique du Canada

Vol. 9, No. 3

September — Septembre 1977

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### TAKING ADVANTAGE OF OUR DIFFERENCES AND ATTRIBUTES

*Following is President M.E. MacGillivray's opening welcome to the 27th Annual Meeting of the E.S.M. and the E.S.C.*

That the Annual Meeting of the Entomological Society of Canada is being held in conjunction with the meeting of an Affiliate Society is no coincidence. When the Entomological Society of Canada was reconstituted in 1950 to serve entomology on a national basis its organizers encouraged the revival and formation of regional societies to meet the entomological needs of the particular regions. The Entomological Society of Manitoba was born the year the Entomological Society of Canada was reborn.

In these twenty-seven years we have had an opportunity several times to meet the people, view the scenery, and sample the hospitality of seven different regions of our nation. Each region is different in its geography, history, culture, speech, and, I must not forget, different in its entomology. Each region prides itself on its own particular attributes and that is as it should be. These differences, these attributes are what make our country strong, are what make us so fortunate to be Canadians.

I am pleased that these traditional meetings have continued over the past quarter century. It has given us a chance, as a National Society, to share with you many special events; such as, the 100th anniversary of entomology in Canada in 1963, the centenary of our country in 1967 and seven years ago the centennial of your province. Again this year it is our pleasure to celebrate with you the centennial of your University. Such celebrations serve to show how in 100 years, more or less, we have advanced, and what great opportunities lie in store for us as a Nation, as a Region, as a Society if we take advantage of our differences and attributes to build for the future.

On behalf of the Governing Board and Members of the Entomological Society of Canada I bring congratulations to the University of Manitoba on its centenary and wish it many more centuries of progress. Also I thank the Entomological Society of Manitoba for again hosting our annual meeting, allowing us to share, but for too short a time, your Manitoban differences and attributes, your Canadian hospitality.

August 22, 1977

## **PRESIDENT'S REPORT ON BEHALF OF THE GOVERNING BOARD OF THE ENTOMOLOGICAL SOCIETY OF CANADA**

As President of Canada's oldest scientific society, it gives me pleasure to report to you on behalf of the Governing Board at the 27th annual general meeting of the Entomological Society of Canada. Before I commenced the preparation of this report, I did a bit of soul searching about what message I wished to convey, what message I should convey, and how I should proceed. Naturally, I looked through the reports in the Bulletin of some previous Presidents.

In 1969, A.S. West addressed this organization at its annual meeting in Guelph. Dr. West was my first entomology professor at the University of New Brunswick. I hold great respect for his opinions and advice. In his address he stated that it is incumbent upon the President to deliver an address which deals with some aspects of the present state and future course of entomology in Canada. He challenged us to take a more active leadership role in determining the fate of our discipline and the application of the results of our work. In simple words he noted that entomology in Canada has had its 100th birthday and that it is time we act with maturity. That was eight years ago.

Since then each of our Presidents has shown concern for the role of entomology in Canadian science and has challenged the members to "safeguard the continuity and stability of their discipline." During this past year we have attempted to take up the challenges anew with the charge of Past President Cooper foremost in our minds.

### **Appreciations**

In the time-honoured tradition, colleagues are thanked for their assistance to the President in achieving these annual objectives. With sincerity I follow that tradition.

The past year's accomplishments, and these were accomplishments, came about because of the co-operation of many. I am grateful to those who accepted election to the Governing Board and appointments to committees. They, directed by the Board and led by the committee chairmen, undertook the projects you have accepted as our responsibilities. I extend my thanks to our Trustees who are the ones who keep things moving; our Editors, Dr. Morrison and Dr. Philogène; our Secretary, Dr. Gerber, and our patient and tolerant Treasurer, Dr. Becker. Throughout the year I have had the benefit of the wisdom and advice of Past President Cooper and President-elect Wellington. They always came to my rescue whenever I needed counsel and guidance. With their loyal support, it was my pleasure to serve the Governing Board, Trustees, and Members. Being President of the Entomological Society of Canada has been my privilege and honour.

### **Society Operations**

The operation of the Society between annual meetings is in the hands of the Governing Board, made up of seven Directors from Affiliated Societies, six Directors elected at large plus the Executive Committee. The business of the Board between Board Meetings is conducted by the Executive Council and the Trustees who are appointed by the Board. The success of the Society depends on the kind of Directors sent to represent the Affiliates, the kind of Directors and Officers elected by active members, and the Trustees appointed.



The Board has met three times: (1) At *Toronto*, 27 October, 1976 to act on decisions taken at the Annual Meeting, 26 October, to outline business for the year and to approve committee appointments. (2) At *Laval University*, Quebec, 24-25 February, 1977 where consideration was given to the activities of the Executive Committee and Trustees, and to the reports of progress of other Committees. Reports were thoroughly discussed and directions given to the Executive, Trustees and Committee Chairmen. All Directors except two were present. (3) At the *University of Manitoba*, Winnipeg, 20-21 August, 1977 where the accomplishments of the Society for the past ten months were reviewed, recommendations to the membership formulated, and action taken where necessary. Some matters were referred to the incoming Governing Board.

During the term of office of this Board, wherever possible a Director has been assigned to at least one Committee of the Society. Practically every Director in 1977 was also Chairman of a major committee or subcommittee. Some Directors served on several committees.

It has been difficult to assign responsibilities to Directors from Affiliates because the term of office varies as does the date of appointment. The affiliate Directors are the links between Affiliated Societies and the Entomological Society of Canada. It is through these Directors that the ESC may serve the various regions of our country.

So that better service may be provided, so that the ESC may make better use of all seven Affiliate Directors, we are asking that the term of Affiliate Directors be three years, with appointment date made on a predetermined rotational basis. Thus all Directors will serve three years.

It is important for you to recall that except for the Managing Editor and part-time assistants to the Treasurer and Editor, the Society is operated by volunteer members. Unless all members accept more responsibility and participate more in committee projects, and, as individuals and affiliates further the objectives of the Society, it will be necessary to hire an Executive Director, a recommendation made ten years ago and repeated by several of our Presidents.

To aid the Executive Council in the operations of the Society, there is before the membership for approval, an amendment to the By-laws to add an additional elected officer, the second vice-president, to the Council. You will soon have an opportunity to vote on the amendment by a mail ballot.

## **By-laws**

By-laws have been under revision since 1972. Minor corrections to the revised By-laws as required by the Department of Consumer and Corporate Affairs were made and were approved by that Department on 9 November, 1976. Through the efforts of Mr. Martineau, a member of the By-laws Committee, these have been translated into the French language along with the Letters Patent. We are grateful to Mr. Martineau for undertaking this task for us. The English and French versions of the By-laws were published in the Bulletin, Vol. 9 (2).

The Standing Rules have been brought up to date. These will be presented to you for your approval. Committee Guidelines have been finally assembled. These are not to be construed as rigid rules. They are guidelines to aid members in determining the role of each committee and its organization. These guidelines should be



updated periodically as the functions of committees change. We hope that the revised By-laws, Standing Rules and the newly assembled Committee Guidelines will make the Society function more smoothly.

## Meetings

The Annual Meetings of the Entomological Society of Canada usually have been held in conjunction with the Annual Meeting of an Affiliate Society. These have occurred as early as August and as late as November. The By-laws state that the new Governing Board, Trustees, Officers and Committees take office at the end of the Annual Meeting, a variable date. However, there are set dates for the receipt of nominations for officers, for scholarship applications, for honours and for elections. When the Annual Meeting of this Society is too early or too late confusion and conflicts arise. Because of the late date of the Annual Meeting in 1976, the present Governing Board has had to complete its assignments in 10 months. The last Governing Board carried its responsibilities two extra months. In either case unnecessary burdens were placed on those involved, especially on the Executive Committee and Trustees. It is for these reasons that we recommend that the Annual Meeting of this Society should be held between 15 September and 31 October. This in no way need affect the date of the Annual Meeting of any hosting Affiliate.

The date and place of the 1978 meeting have already been approved for 20-24 August at the University of Ottawa. At that meeting we will be celebrating with its Faculty of Science and Engineering its 25th anniversary. Plans are well underway for this meeting, organized solely by members of the ESC.

In 1979 we will be hosted by the Entomological Society of British Columbia. The Entomological Society of America has requested to meet with us in 1982. Its Board is meeting in Toronto 25-26 August and our representative will be present to ascertain the responsibilities of this Society in a joint meeting.

This 27th Annual Meeting of the Entomological Society of Canada has been most successful. Dr. Brust, a Director representing the Entomological Society of Manitoba, has been our liaison with our host. He has kept the Executive and Board well versed on progress and problems. The guidelines for joint meetings seem to have worked well. The Entomological Society of Canada continues to be grateful to the hosting societies and recognizes that Affiliate Societies should not suffer a financial loss when they organize a joint meeting. Consideration must be given to increasing the allotted funds or to eliminating all unnecessary costs.

In the past seven years, the Presidents of this Society have attempted to either attend or appoint someone to represent them at the Annual Meetings of the Affiliated Societies. It would be helpful if the Executive Council could be notified of these meetings in advance, if the Affiliates wish for the presence of ESC representatives. The President of the ESC attended the Annual Meeting of the Acadian Entomological Society. Greetings on behalf of the ESC were extended to the ESS, ESBC, ESM, and ESQ by designated members attending the Annual Meetings of those Societies.

At the time of the February meeting of the Board, the Biology Department of Laval University hosted an evening meeting with the faculty, students, amateur entomologists and members of the Quebec Entomological Society. The President, President-elect and the Chairman of the Public Education Committee spoke to the group.

## **Membership**

One of the major accomplishments during this past eight months has been the completion of a membership list, the first since 1971. The lack of such a list in the past created many problems when appointments were to be made. This for the use of members, committees and the board. The Chairman of the Committee has provided a computer listing of all members of ESC and of Affiliated Societies. Each member has a number so that the member can be found readily by the computer if changes are necessary. There are some amendments to be made shortly.

## **Fellows**

Presently there are 46 of our colleagues who have the privilege of using the initial FESC after their names. It was a pleasant experience for the President to receive the letters of acceptance from those honoured in 1977. Twenty-one members were selected as fellows this year. These were listed in the Bulletin, Vol. 9 (1):38.

## **Honorary Members**

There are nine Honorary Members in our Society: R.E. Balch, E.M. Duporte, R. Glen, G.P. Holland, W.N. Keenan, G.F. Manson, A.D. Pickett, H.H. Ross and recently elected to that honour, L. Daviault. Our profession lost a good friend with the passing of Honorary Member W.J. Brown this spring. I would like this meeting to extend greetings to each of these honorary members.

## **Emeritus Members**

This status of membership is available to active members on retirement. Many of our members at that time forget that this opportunity to keep in touch with colleagues is available to them. Would it be possible for the Affiliate Directors, through the Affiliates, to take on the responsibility of reminding those who are qualified for Emeritus Membership that they must apply to the Treasurer for this?

Many of our Emeritus Members would like to be active in Society affairs or even in entomology, but they feel limited by their lack of stenographic assistance. Is this an area where the Society could provide help? Is there an opportunity for Emeritus Members to utilize the Federal Government's New Horizons Project by acting in an advisory capacity to entomological projects? Funds for such projects are available; the advisors receive no remuneration.

## **Honours and Awards**

In 1977, the Society has recognized again outstanding contributions to entomology by awarding the Gold Medal to John Antony Downes of the Biosystematics Research Institute, Ottawa, and the C. Gordon Hewitt Award to John Harvey Borden, Pestology Centre, Simon Fraser University, Burnaby. Members of this Society should note the outstanding contribution Antony Downes has made to entomology in Canada and to this Society. He is one of the few who willingly takes on yet another task if he believes it will benefit our Society or our profession. The spirit of the Hewitt Award demonstrates that with youth there can be great accomplishment. Hewitt accomplished much for Canadian entomology in his short lifetime. It is fitting that we honour him and today's younger scientists by this memorable award. Bela Andras Lajos Nagy, from the University of Western Ontario, was chosen as the 1977 recipient of the Society's Postgraduate Scholarship.



## **Finance**

Inflation is a major problem. If the members wish programs, projects and publications to be continued, it will cost us more than in the past.

At the first meeting of the Board, the Finance Committee was instructed by the Board not to look further into the purchase of a headquarters building. The Board decided that the Society should not purchase the property on Carling Avenue on which it held an option.

Although the members at the 1976 Annual Meeting accepted the recommendation of the Finance Committee to increase the fee for Sustaining Members to \$250, the present Membership Committee requested that this be lowered to \$100 because potential Sustaining Members are not willing to pay the higher amount. The Board recommends that a \$100 fee be approved. You will be asked to ratify this new dues charge for Sustaining Members.

The Society again applied for an NRC Grant to assist members from universities with publishing costs. The request was not granted because under the terms of reference for awarding grants our society's request was not qualified and the request was not considered.

## **Heritage**

For several years the Society has been collecting artifacts for an Archives. Some of these are deposited temporarily in the National Archives. This year the historical and archival aspects of our Society have been considered by the Heritage Committee. This Committee is just getting under way and is requesting support from all members and Affiliates.

## **NRC Grants Selection Committee**

Three names were submitted to this Committee based on guidelines provided. We are happy to report that one of our nominees, President-elect Wellington, has been appointed to the Population Biology Committee. Again this Society has had a breakthrough.

## **Scholarship Fund**

The scholarship fund (at present \$5,775.00) continues to increase, but slowly. No monies will be taken from this fund to provide for the annual Postgraduate Scholarship Award until such time as the interest earned by the fund is sufficient to cover the amount of the Award. Accrued interest as of January 1, 1978 should be great enough to cover one \$500.00 scholarship annually. Members are encouraged to contribute to this tax deductible fund.

## **Pilot Study for a Biological Survey of the Insects of Canada**

When this project was discussed last October by Dr. Cooper in his presidential report, he noted that we were waiting for the contract to be signed. This waiting period extended into January, 1977 and the contract was eventually signed thanks to the efforts and dedication of Past President Cooper. Without his dogged

perseverance the Society could have waited an indefinite length of time before a contract for 18 months was signed.

The terms of the contract and information about the activities of the original Scientific Committee were published as a supplement to the Bulletin, Vol. 9 (1), 1977 and the Secretariat of the Pilot Study presented a progress report in the June issue of the Bulletin, Vol. 9 (2):72-74.

The late signing of the contract and the abbreviated duration for the pilot study has placed serious restrictions on the Secretariat in developing the study as planned. Further problems are anticipated if the Pilot Study concludes in June 1978 without further funding available to bridge the period between the end of the pilot study and the beginning of a continuing Biological Survey.

This Pilot Study is the most important project the Society has undertaken since its reconstitution in 1950. Similar programs that might be undertaken in the future will depend on the success of this project. However, the Entomological Society of Canada should not jeopardize its status as an independent organization, an organization operating outside the realm of government, by hastily committing itself to government-funded projects. The Entomological Society of Canada must retain its status as a professional Society, whose object is to promote entomology in Canada. This Society must retain its right to speak freely, with its executive and employees accountable only to the Governing Board and members.

## **Publications**

The Finance Committee and the Publications Committee were requested by the Board to study methods of financing the Memoirs. These Committees suggested that the ESC check the feasibility of starting another series of publications (special publications) to be sold at a price to cover at least the cost of publications. The present Memoir series would be retained for those who can afford to publish in it. If the Society decided to expand its participation in the publishing field, it must establish the purpose(s) of expansion; for profit, for promotion of entomology, for both.

The Board is grateful to those who are involved in the publication of the Canadian Entomologist: Editor, Associate Editors, Treasurer and Publications Committee. The time and effort given freely by these volunteers are our only assurance that the Canadian Entomologist will continue to be published at such a low cost to members.

The Bulletin is now in its ninth volume and serves as a valuable source of information on past and present activities. The Board encourages more members to utilize the Bulletin as a medium to express opinions about the Society, about entomology.

## **Science Policy Committee**

The Science Policy Committee for the past few years has been one of the Society's most active committees. Dr. Munroe, who had served as Chairman for two sessions, requested that he be replaced. His immediate successor found it necessary to resign soon after the February Board Meeting. Dr. Robin Stewart, our representative to SCITEC, willingly took up the task of Chairman. His Committee and Subcommittees met together for the first time at Macdonald College in April.



Dr. Harris two years ago stated that if we are to assume greater responsibility in representing our members on matters of science policy there are four objectives to accomplish. Of these, the Manpower Survey was completed and presented to the members at the October 1976 meeting. The Board requested all Affiliates to study the recordings and typescript of the addresses given during the Manpower Symposium. There has been meagre response from these. The indifference is shocking.

There is much that this Society could do towards aiding Government of Canada agencies in recommending suitable entomological recruits for international projects. The President, on behalf of the Society, has offered to cooperate with CIDA, IDRC, FAO, EPA and WHO and to provide qualified entomologists for selection committees. There have been encouraging responses from some of these organizations.

The Research and Extension Survey Subcommittee has established three objectives and has a questionnaire for distribution. A Subcommittee on the Funding of Research in Universities has investigated aspects of funding such as NRC policy and procedures, Federal and Provincial funding. A Subcommittee on the Present Status of Entomology in Government has been established and will, no doubt, be co-operating with a committee of BCC which is studying the status of biologists in government.

Our representative to SCITEC states that this has been one of SCITEC's best years. A mini-forum on science and the media was attended by a member of our Public Education Committee and we were represented at the forum, "The Critical Points in the Decision Making Process."

The Board of Directors at the February, 1977 meeting recommended that the ESC rejoin BCC. An editorial in the Bulletin, Vol. 9 (2) relates to this.

If this meeting decides to rejoin the BCC, the action cannot be construed to indicate a contravention of a decision of a previous Board in 1975. Unless this Society continues to be flexible and to move with the times, because circumstances do change, we will become a static Society, preoccupied with preventing change. And unless we attract those who are willing to change as situations dictate, then we will become a Society of outdated, opinionated specialists rather than a forward thinking group which takes advantage of every opportunity to promote its profession.

Dr. Wellington, our President-elect, has been appointed to the Executive of BCC, not as an entomologist, not as a representative of ESC, but as a biologist. You can be certain that he will have the interests of this Society foremost in his mind.

This brings us to the rejoining of BCC. We voted, in 1975, to remove ourselves from participation in BCC. You will be asked to consider rejoining BCC before this Annual Meeting is adjourned. You should take great care in deciding.

The Science Policy Committee reports that the discipline of entomology is suffering from the same malaise as all aspects of science and that the message from all other sectors of science is the great need to let the public know what is going on within the science disciplines. This has been recognized by our Society's Public Education Committee.

## Public Education

The panel participants in the Manpower Seminar at the 1976 Joint Meeting of this Society with the Ontario Society left the message that entomologists must make themselves known to the public if our profession is to flourish.

The President was interviewed by a New Brunswick Daily paper regarding the Entomological Society of Canada. A similar taped interview was made by CBC, TV for a supper hour program called New Brunswick Today. This receives Maritime coverage.

The Executive Committee prepared a news release, January 18, 1977 which was issued throughout the Atlantic Provinces and Quebec. The title of the release was "On the Spruce Budworm Controversy." The President gave a five minute interview to the local CBC station and a thirty minute interview to Radio Atlantic to further support the content of the news release.

The Society has received many complimentary assessments on this release from those who support aerial spraying of spruce budworm, as well as from those who are opposed. We must continue to take a stand on such issues and establish ourselves as responsible scientists. After all, we did publish Pesticides and the Environment seven years ago. I hope this annual meeting will issue even one worthwhile statement before it adjourns.

The present Public Education Committee covers student encouragement and publicizing entomology. Through the efforts of this Committee a Resource Catalogue for Entomological Institutions was published in the Bulletin, Vol. 9 (2), to aid in disseminating knowledge about insects and related arthropods. The Committee, chaired by Dr. Robert Trottier, has several objectives to widen the public image of entomology. That Committee believes we must demonstrate to all Canadians the importance of entomology. President Baldwin in 1971 stated, "Believe it or not, people are interested in insects and one method of getting public support is to tell the public about them."

Affiliate Societies are requested to form a Student Encouragement Committee. Each year \$100 is available to each Affiliate for this purpose and may be accumulated for three years. The Manitoba Society has an active, well-organized student encouragement program, one that could be adopted for use almost anywhere.

Two months after our Committee was appointed it presented seven objectives for 1977 to the Board. Your participation is needed to reach these goals. There are many scientists looking for research dollars. When the importance of the entomologists' work is better known by the public, we will be in a better position to compete for the tax dollars.

## Today's Challenge

This summarizes some of the activities of the Society since October, 1976. As an association of scientists and specialists it has been said (Corbet, P.S. 1973. Bul. Ent. Soc. America 19 (1):10-11) that the Entomological Society of Canada has a responsibility to the public, including its elected representatives and government officials; a responsibility to the scientific community internationally but particularly nationally; and a responsibility to the science of entomology and accordingly to those who practice it whether or not they are paid for doing so. Each of the programs on which I reported are directed to meet these responsibilities. But these will



come to naught if we neglect what I believe to be today's foremost challenge, public education. That we do not exist in the public consciousness is, in large part, our own fault.

Each of us now must communicate with public, with municipal councillors, with provincial legislators, with federal parliamentarians. We must tell them of the accomplishments of entomologists in the production of food and fibre; and of the contribution entomologists have made and are making to our Canadian way of life. We must explain to them in simple terms the simple truths about insects, about their management, and about the extreme destructions that can occur when chemical controls no longer work or are no longer available. We must tell them that the numbers of entomologists are dwindling, that if the alternatives to chemical controls are to be found researchers and research funds are needed.

We must communicate with other scientific communities; engineers, plant breeders, chemists, pathologists, economists, all who might help to develop those alternatives.

We must stop the erosion of our profession; we must expose the pseudo-entomologists, those from other disciplines who make use of their prestige earned through their own profession to catch the ear of governments and public on entomological issues; we must stop their intrusion; we must accept the responsibilities of maturity and leadership.

As a Society and as individual entomologists we have, with a somewhat false humility, withdrawn from the headlines, down played our role, and permitted our public image to verge on the ridiculous. This must change because today we are not being heard as scientists, our role in world food production is not valued, and our ability to provide manageable solutions to entomological problems is not recognized. It is far easier for governments to react to the simplistic charges, easy solutions, the superficial approach of the radical environmentalists than it is to the less dramatic, the harder realities and cures formulated by today's entomologists.

Time is running out for our profession. We must communicate this fact now to our fellow entomologists. We must jolt them out of their indifference and convince them that unless each individual entomologist has his own public education campaign our profession will lose the opportunity to contribute directly to mankind's nurture and survival, will lose its identity. Our profession will cease to exist.

Winnipeg, August 22, 1977



"Investigators are always divided into those who are looking for rules and those who are looking for exceptions."

L.W. Hackett

**GOLD MEDAL AND C. GORDON  
HEWITT AWARD  
MÉDAILLE D'OR ET PRIX  
C. GORDON HEWITT**

Members are reminded to submit, *by 30 November, 1977*, their nominations for the Entomological Society of Canada Gold Medal for Outstanding Achievement in Entomology and for the C. Gordon Hewitt Award for recipients under 40 years of age. Conditions governing these Awards were summarized in the Bulletin (Vol. 9, No. 2, p. 61). Eligibility for both Awards may be based on research accomplishment of consequence to entomology in Canada, or on service and dedication to research administration, extension, and education, and to the Society or its Affiliates. The Awards will be made only if suitable recipients are nominated.

Nominations marked "Confidential" may be sent to:

Nous désirons rappeler aux membres de la Société qu'ils doivent soumettre, *au plus tard le 30 novembre 1977*, les nominations pour la Médaille d'Or et le Prix C. Gordon Hewitt. Les conditions réglementant ces distinctions ont paru dans le N° 2, Vol. 9 du Bulletin (p. 61). Sont éligibles pour ces distinctions ceux(celles) qui ont fait une contribution remarquable à l'entomologie au Canada dans les domaines de la recherche, l'administration, l'éducation, l'extension et les affaires de la Société et de ses filiales. Les médaille et prix ne seront remis que s'il y a un nombre suffisant de nominations.

Envoyer les nominations avec la mention "Confidentiel." à

Dr. George H. Gerber  
Secretary  
Entomological Society of Canada  
Research Station,  
Agriculture Canada  
195 Dafoe Road  
Winnipeg, Manitoba R3T 2M9

**1976-77 ANNUAL REPORT: ACHIEVEMENT AWARDS COMMITTEE**

Nominations for the 1977 ESC Awards were solicited by the established procedures — announcements in the June and September, 1976, Bulletins and in the Fall mailings of the Dues Notices. Additional announcements were sent to appropriate Canadian University Departments and Government Laboratories.

As reported at the mid-winter meeting of the Board, after intensive reviews the Committee unanimously recommended to the Governing Board that John Antony Downes be awarded the 1977 Gold Medal and that John Harvey Borden receive the 1977 C. Gordon Hewitt Award. Announcements of the winners were placed in the Bulletin and their biographical brochures were prepared. The Secretary also sent brief press releases to an extensive list of journals, magazines and newspapers.

Letters were sent to the principle nominators of unsuccessful candidates to remind them that their nominees must be renominated to be considered by the incoming Committee for the 1978 Awards.



A few nominations were responses to the notices sent to Universities. The 1977 Committee supports the recommendation of their 1976 predecessors, that Directors from Affiliated Societies familiarize themselves with nominating procedures and then urge their respective Societies to establish committees to place names annually before the ESC Committee. The 1977 Committee believes that without such regional support, there is a very real danger that future slates of candidates will suffer the consequences of inbreeding caused by diminishing numbers of nominators. Those few nominators who presently try actively to bring real scientific merit to our attention deserve much stronger continuing support from all the branches and all the disciplines of our Society.

The Committee recommends that procedures for printing and proofreading the winners' brochures be standardized by giving these responsibilities jointly to the Editor of the Bulletin and the Managing Editor of the Canadian Entomologist, so that they can deal regularly with the Society's Printer. That change in procedure would provide far better continuity through the regular efforts of an experienced team than our present annually changing roster can provide.

W.G. Wellington (Chairman)

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### INSECT PHOTO SALON — 1977

There were eight participants in the Seventh Annual Insect Photo Salon. Conditions of entry were published in each Bulletin of the Entomological Societies of Canada and America.

Fourteen coloured slides, six coloured photos and one black and white photo were received. Three professional photographers judged the submitted material. The results were as follows:

#### Coloured Slides:

First	— <i>Lethe protlandia</i>	W.B. Preston
Second	— Black Swallow Tail Larvae	James Mertins
Third	— Lycosid	W.B. Preston

#### Coloured Photos:

First	— Mating Locust Borers ( <i>Megacyllene robiniae</i> ) (Forster)	Bill Hoffard
Second	— Pentatomid feeding on Budmoth Larvae	A.T. Lightfoot
Third	— Swallow-tail ( <i>Papilio polyxenes</i> )	A.T. Lightfoot

No awards were granted for the black and white entry as there was only one entry.

Best overall entry	— <i>Lethe protlandia</i>	W.B. Preston
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K.H. Sanford  
C.R. MacLellan  
H. June Herbert

ANNOUNCING  
V INTERNATIONAL CONGRESS OF ACAROLOGY  
East Lansing, Michigan  
August 6-12, 1978

The Congress will feature nine symposia. Topics, Conveners and Moderators follow in that order:

1. Pest Management of Agricultural Mites  
Brian A. Croft and N.W. Hussey
2. Stored Product Acarology  
Robert Davis and Jan Boczek
3. Pheromonal and Hormonal Communication Systems in Acari  
J.H. Oliver, Jr. and R. Galun
4. Current Research on Disease Transmission by Acari  
C.E. Yunker and J. Rehacek
5. Physiology and Biochemistry of Acari  
J.R. Sauer and Willi Knulle
6. Recent Advances in Soil Mite Biology  
R.A. Norton and J.A. Wallwork
7. Management of Acari of Medical and Veterinary Importance  
R.O. Drummond and R.H. Wharton
8. The Biology of the Spotted Fever Ticks, *Dermacentor variabilis* and *D. andersoni*  
D.E. Sonenshine and P.R. Wilkinson
9. Biology of Two-spotted Spider Mites, *Tetranychus urticae* and *T. cinnabarinus*  
W.W. Cone and U. Gerson

Informal conferences and workshops will be held in:

1. Phoresy
2. Mites in the Home
3. Biogeography of Acari
4. Advances in Classification of Higher Categories

Papers may be submitted in the following categories:

1. Systematics, Morphology and Evolution of Acari
2. Physiology, Biochemistry and Toxicology of Acari
3. Ecology, Behavior and Bionomics of Acari
4. Medical and Veterinary Acarology
5. Agricultural and Stored Product Acarology

Interested persons are encouraged to write for further information to J.G. Rodriguez, Secretary of the Congress, at the following address: Entomology Department, University of Kentucky, Lexington, Kentucky 40506.



**AUDITOR'S REPORT**  
(For year ended December 31, 1976)

To the Members of

**ENTOMOLOGICAL SOCIETY OF CANADA**

We have examined the balance sheet of the Entomological Society of Canada as at December 31, 1976 and the statement of financial activity for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

As is usual in organizations of this kind, it was not possible to completely verify the revenue from all sources and therefore the statements show the recorded revenue.

In our opinion, subject to the foregoing, these financial statements present fairly the financial position of the Society as at December 31, 1976 and the results of its operations for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Geo. A. Welch & Company  
CHARTERED ACCOUNTANTS.

Ottawa  
May 27, 1977.

**ENTOMOLOGICAL SOCIETY OF CANADA**  
(Incorporated under the laws of Canada)

**BALANCE SHEET**  
December 31, 1976

**ASSETS**

	1976	1975
Cash	\$ 16,001.38	\$ 50,821.57
Accrued interest receivable	4,814.50	4,011.25
Accounts receivable	26,880.50	20,883.09
Term deposits — 8 3/4% due December 29, 1978	10,000.00	10,000.00
— 9 3/4% due January 15, 1980	25,000.00	25,000.00
Government and government guaranteed bonds — at cost — (quoted value \$77,000; 1975 \$41,400)	79,923.03	49,848.03
Other bonds — at cost — (quoted value \$94,762; 1975 \$73,000)	95,000.00	75,000.00
	<b>\$257,619.41</b>	<b>\$235,563.94</b>

**LIABILITIES AND SURPLUS**

<b>LIABILITIES</b>		
Accounts payable and accrued liabilities	\$ 15,458.69	\$17,413.70
Prepaid memberships, subscriptions and reprints	25,411.00	22,719.48
Unearned portion of National Research Council grant	—	4,758.50
	<b>40,869.69</b>	<b>44,891.68</b>
<b>SURPLUS</b>		
Balance, beginning of year	190,672.26	162,898.10
Add:		
Net revenue for year	26,077.46	27,774.16
Balance, end of year	<b>216,749.72</b>	<b>190,672.26</b>
	<b>\$257,619.41</b>	<b>\$235,563.94</b>

# ENTOMOLOGICAL SOCIETY OF CANADA

## STATEMENT OF FINANCIAL ACTIVITY

Year Ended December 31, 1976

	1976	1975
<b>REVENUE</b>		
Regular memberships	\$ 16,414.20	\$ 15,880.87
Student memberships	1,319.93	1,416.00
Sustaining memberships	100.00	—
Subscriptions	35,189.42	39,001.15
Sale of reprints including page charges	84,366.00	60,677.37
Sale of back issues	3,277.13	4,693.78
Publishing "Memoirs"	32,661.00	21,245.00
Interest earned — net	18,312.19	14,864.18
Gain on sale of securities	210.00	—
	191,849.87	157,778.35
<b>EXPENDITURE</b>		
Publishing costs — "Canadian Entomologist"	70,032.69	60,802.32
— bulletins	8,667.28	4,367.95
— reprints	6,226.89	3,249.76
— memoirs	24,979.39	16,041.91
Annual meeting — grants	5,145.94	2,533.21
— travel and expense	3,202.69	3,441.75
Other societies — dues and grants	1,728.82	1,350.00
— delegates	—	1,289.73
Salaries	30,744.20	25,890.67
Directors' expenses	2,461.04	2,223.25
Honoraria to Managing Council	1,600.00	900.00
Canada pension and employment insurance	699.38	532.64
Student encouragement	950.00	987.64
Professional fees	625.00	575.00
Postage and office supplies	3,178.28	2,110.50
Telephone	174.52	293.51
Rent	2,865.52	2,776.81
Editorial meeting	1,318.72	—
General expense	1,122.05	637.54
	165,772.41	130,004.19
<b>NET REVENUE FOR YEAR</b>	<b>\$ 26,077.46</b>	<b>\$ 27,774.16</b>

## MEMOIRS OF THE ENTOMOLOGICAL SOCIETY OF CANADA

"Guide to the Geometridae of Canada (Lepidoptera). II. Subfamily Ennominae. 2" by W.C. McGuffin. 191 pp. Issued 22 July, 1977.





### WILLIAMSON JAMES BROWN

Williamson James Brown died on 15 May 1977 at Ottawa. One of Canada's leading coleopterists, Bill was widely known for his work on systematics of scarabaeids, elaterids, and chrysomelids; on problems of sibling species; on composition and distribution of arctic beetles; and on accidental introduction of European beetles into North America. In the course of his long career, he acquired a knowledge of beetles far beyond that indicated by his publications.

Bill was born on 23 August, 1902 near Preston, Nebraska, on the Sac and Fox Indian Reservation. He received a B.A. degree from the University of Kansas in 1923 and a M.Sc. degree from Oklahoma Agricultural and Mechanical College in 1924. He was an instructor at Oklahoma A. & M. for three years before coming to the Division of Systematic Entomology, Canada Department of Agriculture Ottawa, in January of 1927. Despite its pretentious name, the professional staff at that time consisted only of Drs. J.H. McDunnough and C.H. Curran. By the time Bill retired in August 1967, after 40 years' service, the "Division" had increased to a staff of 27 professionals.

Bill, who was used to "winter collecting" by bark pulling, turning logs, etc., and "spring collecting" that started as early as mid-February, was surprised to find the ground still frozen and snow-covered in Ottawa as late as the end of March. He therefore attempted to survive the long winters by learning the Canadian species of at least one family of beetles each year. Before his retirement, he had published on over 25 families of beetles occurring in Canada and had extensive notes on many other families.

During his career, Bill was the author of 87 scientific papers, 80 of which were on beetles; the majority of these dealt with the Canadian fauna. Most of his publications were the direct results of his numerous collecting trips. His early papers were mostly on the scarabaeids, especially the dung beetles. He liked to recount how once while collecting in Payne County, Oklahoma, he felt the call of nature. Retracing his steps some time later he discovered some dung beetles rolling their characteristic balls. Always a collector, he retrieved the beetles several of which, as well as one dung ball, are still preserved in the Canadian National Collection! Because of the need for identifications of elaterids (to support the work on wireworms done on the prairies in the thirties), he switched his attention to work on this family. In the forties and fifties, he turned to the leaf beetles and to problems of plant host specificity.

A meticulous worker himself, he had a profound respect for any serious student of beetle taxonomy and would take any amount of time to discuss problems with him. Bill's door was always open and undoubtedly the time spent talking to others who sought his advice on beetles, speciation, stamps, the stock market, etc., hindered his own research productivity. On the other hand, those of us who sought his counsel profited. One friend remarked that Bill would always go that extra mile to help as long as the request was sincere. His kind and gentlemanly nature was as much a part of him as the blue tie tucked in his shirt pocket and the ever present cigarette in his hand.

Bill enjoyed "tying-down a name", perhaps even more than describing a new species. Whereas many entomologists would have simply described a species as new,

he would spend hours in the library checking and rechecking old descriptions for a clue as to the identity of an unfamiliar beetle. He was particularly fond of "discovering" European beetles that had been accidentally introduced into Canada, and three papers on this subject were published over the years.

Bill was a very careful writer and chose his words cautiously. He was a perfectionist and was never really satisfied with his own research — there was always one more thing to check. An example is his manuscript on the distribution of the beetles in the eastern arctic, which he never quite finished (hopefully this will be published posthumously). Several times after he retired, he mentioned to me that of all his papers, only one could be republished today without change. This was the one on taxonomic problems with closely related species, which appeared in volume 4 of the Annual Review of Entomology. Not satisfied merely to study museum specimens, Bill preferred to observe the species in nature, particularly host-specific leaf beetles. Several summers were spent studying the host relationships of various species and genera of chrysomelids, especially the species of *Calligrapha*.

The Canadian National Collection contains many insects, particularly beetles, collected by Bill. Not one to use a sweep net promiscuously, he used it only to find out what beetles were present in an area. Then he would hand-pick the leaf beetles from the plants on which they were actually feeding. Many summers were spent in the Ottawa Valley using this method, especially during the war years when budget and travel were restricted. Besides collecting in many areas across Canada, he made a number of extended expeditions, going twice to the north shore of the Gulf of St. Lawrence and along the Labrador Coast by supply boat; also to Churchill, Manitoba; to the McKenzie Delta, N.W.T.; to the Kenai Peninsula, Alaska; and to Greenland. He was the first professional entomologist to investigate the fauna at points in the eastern arctic. On his second trip to the north shore of the Gulf of St. Lawrence, he had to find alternate river transport — the owner of the first boat considered his influence on the native people was too disruptive!

He described as new 11 genera, 2 subgenera, 268 species, and 25 subspecies. A careful worker, most of these taxa are still valid.

Bill was a long-standing member of the Entomological Society of Canada and was elected an Honorary Member in 1975; he was editor of the Canadian Entomologist from 1939-46. Bill was also a member of long-standing and fellow of the Entomological Society of America, was elected second vice-president in 1944, served on the Editorial Board of the Annals in 1940 and 1945-47, and was elected to the Governing Board 1946, 1951 and 1961-63. He was also a member of several other scientific societies, organized the Taxonomy Section of the Tenth International Congress of Entomology in 1956.

On 25 August, 1934, Bill married Grace Johnston of Arnprior, Ontario. He is survived by his widow in Ottawa and two sisters in the United States.

A complete list of Bill's publications will be published in the Coleopterists Bulletin.

Bill was one of the first as well as a major contributor to the endowment fund of the CanaColl Foundation, an independent, non-profit organization formed specifically to support research on the Canadian National Collection of insects and related arthropods. A W.J. Brown Memorial Fund has been established in his memory.

In conclusion, I can think of no better expression to describe Bill than that used by one high-ranking administrator, "Bill was pure gold."

Edward C. Becker



## PILOT STUDY FOR A BIOLOGICAL SURVEY OF THE INSECTS OF CANADA

This contribution on the Pilot Study, like the previous report in *Bull. Ent. Soc. Can.* 9 (2):72-74, is intended to keep members informed of Biological Survey developments.

### Canvass of resources and needs

#### 1. Questionnaires

At the time of writing (early August) about 70% of the more than 300 questionnaires sent to individual Canadian professional entomologists and graduate students known to be interested in systematics and faunistics have been returned. A return of this size is considered excellent by normal standards. Returns from the larger number of individuals in other categories are much lower.

Responses from curators of Canadian museum collections (60% of 90), from establishments conducting entomological research (50% of 110) and from potential users of entomological information (45% of 175) have also reached useful levels.

Analysis of the returns has begun, but detailed summarisation of results is being delayed as long as possible to accommodate late replies (some responses are expected in early fall following the return of individuals from fieldwork, etc.).

#### 2. Visits to entomological establishments

The spring program of visits to various establishments was concluded with visits to Eastern locations. Montreal, P.Q.; Toronto, Guelph, Waterloo and London, Ontario; Fredericton, N.B.; Halifax, Kentville and Wolfville, N.S.; and Charlottetown, P.E.I., were visited during May and early June.

A series of early winter visits is planned, following the second meeting of the Scientific Committee, to discuss recommendations based on information in the questionnaires, and to facilitate the planning of cooperative ventures for 1978.

#### 3. Review of Potential Survey Sites

Areas already set aside for preservation have great potential as survey sites for a continuing Biological Survey.

Initial listing and general characterisation is in progress for National Parks, Provincial Parks, Ecological Preserves, Wilderness areas and similar preserves.

### Cooperative ventures

#### 1. List of requests

A list of 21 requests for material to be collected this summer in connection with regional or national revisions or associated studies was circulated to individuals who had indicated on their returned questionnaires a willingness to collect material (early returns only). This list was also distributed during visits to entomological centres.

#### 2. Regional projects

The cooperative project on Newfoundland mayflies, noted in the June Bulletin, has been extended following local initiatives to include other aquatic groups. Arrangements for assistance with identification have been made.

## **"List of entomologists" publication**

This publication will be a list of entomologists whose interests are broadly relevant to the biological survey, with specialities shown. The information has been derived from returned questionnaires. The format for publication of entries is being established, and the list will be prepared in final form after the deadline for receipt of questionnaire returns.

## **"Scientific baseline" publication**

This publication is intended as the major scientific (as opposed to logistic or contractual) basis from which a continuing survey can be given direction.

Authorship for most of the work has been established. Commitments to write sections of this document have been received from about 25 individuals, and others will be involved in the sections on the individual taxa through coordinating authors for the larger orders. The manuscript for one short section has already been received.

## **Scientific Committee**

### **1. Study Groups**

#### **(i) An all-inclusive Biological Survey**

Responses have been received from some of the organisations contacted by the Study group on the advisability of making the Biological Survey all-inclusive. The Canadian Society of Zoologists has appointed two of its members to meet with the study group for discussions.

#### **(ii) Future Survey Publications**

This study group has communicated several times. Their discussions have covered the eventual compilation of a bibliography of existing survey related publications, the format of future publications and the possibility of developing a "logo" or other indicator of publications related to a Biological Survey of the Insects of Canada.

#### **(iii) Continuing Survey**

A special subcommittee of this study group (K.G. Davey, J.A. Downes, G.B. Wiggins) is investigating possibilities for continuation of the survey beyond the Pilot Study. Their investigation recognises potential difficulties caused by federal fiscal deadlines that fall before the final report of the Pilot Study has been evaluated.

#### **(iv) Other Study Groups**

Because of field trips, etc., up to date information on the work of the other study groups is not available at the time of writing.

### **2. Second meeting of the Scientific Committee**

The second meeting of the full Scientific Committee will take place in Ottawa on 22-23 September, 1977.



## Publicity

### 1. General

Information on the work of the Pilot Study has been widely disseminated in the public media (Newspapers, television, radio), and particularly in a variety of more specialised publications (Agriculture Canada News Bulletin, Canadian Society of Zoologists Newsletter, Association of Systematics Collections Newsletter, News of the Lepidopterists Society, Bulletin of the Museums Association, etc., and others in press).

### 2. Presentations

Dr. D.C. Eidt (Scientific Committee) discussed the Pilot Study at the Annual Meeting of the Acadian Entomological Society, Fredericton, N.B., 3 May, 1977.

Dr. G.E. Ball, Chairman of the Scientific Committee, gave a presentation to the Annual Meeting of the Canadian Museums Association in Calgary, Alta., 2 June, 1977, on the relationships of the Survey and Museum Collections.

A poster presentation by the Secretariat is planned for the Annual Meeting of the ESC at Winnipeg, Man., 22-24 August, 1977.

A presentation on the Biological Survey by Dr. A.D. Tomlin (Scientific Committee) is planned for the Annual Meeting of the Ontario Entomological Society, Guelph, Ontario, in September 1977.

Secretariat  
Biological Survey Project  
202-1316 Carling Avenue  
Ottawa, Ontario K1Z 7L1



## POSITIONS AVAILABLE

McMaster University, Department of Biology anticipates appointing an Assistant Professor, commencing July 1, 1978. The position is for a Quantitative Animal Ecologist preferably with experience in invertebrate ecology; Ph.D. is required. The preferred candidate should have a basic understanding of population biology and ecological genetics. Responsibilities include an introductory zoology course, senior undergraduate and graduate instruction and research. Present salary minimum \$16,500. Applications with the names of at least two referees should be sent as soon as possible to Dr. D.M. Davies, Department of Biology, McMaster University, 1280 Main Street West, Hamilton, Ontario, Canada L8S 4K1.

Assistant Professor, Salary commensurate with experience. Research/Teaching, academic year appointment. Available Spring 1978. Teaching responsibilities include courses in Insect Physiology and Comparative Insect Morphology. The candidate will be expected to establish a strong research program in insect physiology and to direct graduate students. Closing date for submission of applications is October 31st or until a suitable candidate is found. Address inquiries or applications to Dr. Pedro Barbosa, Chairperson, Fernald Hall, University of Massachusetts, Amherst, MA 01003. (Tel. (413) 545-2283.) An Affirmative Action/Equal Opportunity Employer.

## BOOK REVIEWS

**The Future for Insecticides: Needs and Prospects.** R.L. Metcalf and J.J. McKelvey, Jr. (Eds.). (Proceedings of a Rockefeller Foundation Conference, Bellagio, Italy, April 22-27, 1974.) Pp. 524. John Wiley & Sons, New York.

This book consists of 19 contributions spread over five subject areas plus recommendations and a summary by the editors.

The first two articles concerning insecticides in food production and human health take a wider view of the future of insecticides looking at such problems as development costs for new compounds and the effects that continued insecticide use has on other insect control strategies. Furtik in his article, "Insecticides in Food Production" lists a series of measures to help the development of standards in the research development, patenting, registration, and marketing of insecticides. All useful thoughts which scientists, manufacturers and government officials associated with pesticides should devote considerable attention. An internationally adopted registration standard, for example, would be enormously helpful. Furtik also discusses the paradox of developing efficient narrow-spectrum compounds which price themselves out of a market. J.W. Wright's contribution "Insecticides in Human Health" highlights the great impact insecticides have had in the last three decades in controlling the insect-borne diseases which plague mankind. Insecticides receive their best press and highest profile for controlling medically important insects (unfortunately the average consumer doesn't equate the unblemished tomato in the supermarket produce department with insecticides or pesticides). There are a number of schemes on stream which should aid the introduction of new insecticide compounds for medical insect control; the problem is that too few new compounds are being submitted for examination by industry because development costs are too high. A problem pointed out by Wright that I wasn't aware of, but probably deserves more research, is that insecticides used for agricultural purposes have induced, inadvertently, resistance in vectors of public health importance. A short discussion of non-chemical control methods leaves this reader with the impression that insecticides will be around for some time yet to control most insect vectors of disease.

The second subject area, "Limitations of Present Day Insecticides" contains four articles considering resistance, pollution, selectivity and toxic hazards of insecticides. Oppenoorth points out that a major disadvantage of highly selective insecticides is their increased susceptibility to development of resistance which, with their increased development costs, may seriously impede their introduction on a general scale. He confines his discussion to the biochemical aspects of resistance, and gives little consideration to the practical consequences of resistance development in the field.

The contribution on environmental pollution describes two very important problems associated with insecticides; insecticides for which we have effective analytical methods are restricted the most, whereas more refractory compounds survive in use with less stringent regulations. As well, the concern over pesticide use has opened wider the Pandora's box of concern over production of all chemicals (of which pesticides constitute only 1%, and but 10% of all persistent chemicals) many of which are of unknown toxicological properties.

The prospects for improvement of currently used insecticides, with the exception of the synthetic pyrethroids, were generally gloomy. Most of the material of the six articles in this section, although well presented, was mainly a review of the



history, use and chemistry of the major insecticide classes, much of which has been published elsewhere in greater detail. Spencer (*Organophosphorus Insecticides*) does point out where improvements can be made in timing, formulation and application.

The five contributions to the section entitled "Novel Chemicals and Targets" covered topics as diverse as new types of insecticides, to the microanatomy of insect integument. Casida was remarkably optimistic, especially if one considers the difficulties in bringing new insecticides to market today, in suggesting that insecticides of the future will be characterized by their diversity as to chemical type and mode of action. I am unsure of the connection between Locke's article on insect integument and the theme of the book, although his summary may come close to the mark in describing the shortcomings of this book. "... there may be a misapplication of effort in our attempts at insect control. Anyone who reads the journals reporting applied biological work on insecticides cannot fail to be impressed by the expertise of those working on chemical control . . . the work often appears to be specialized and too close to the immediate problems resulting from known insecticides. There is a shortness of vision. There seems to be too little work directed at insects and the generality of their function and too much at the molecules we have invented and their shortcomings with respect to what we should like them to do."

Predictably the two other topics in this section discuss hormone mimics and pheromones. Both are neat capsule summaries of the present standing of research in these fields, but neither article discusses the future development of these materials in any real detail. It was rightly pointed out in the following discussion that hormone mimics would be subject to development of resistance and I can see difficulties here with pheromones too.

Ray Smith's balanced review of insecticides in pest management systems says a lot about the directions insecticide research will have to take in the next decades. He discusses several important areas that insecticide use will have to face such as timing of application, pest monitoring to reduce dosage, new, more efficient application techniques, and new formulations of "old" insecticides. He also points out that broad spectrum pesticides can be used in an ecologically selective manner and that these will probably be far more important than the use of physiologically selective insecticides. The serious limiting factor is the shortage of trained, imaginative applied entomologists to implement pest management programs (and design new ones).

The book covers a massive amount of territory with several excellent articles. The discussions following the articles sometimes enlarge on the future for insecticide use, but for the most part the contributions don't really address the major problems facing the insecticide (pesticide) industry or fire the imagination to new ideas or avenues of endeavour. The book has a reasonable price tag (\$21.00) and should find its way into a number of agricultural research libraries where it may be of limited use to research workers and graduate students in pesticide chemistry and applied entomology.

A.D. Tomlin  
Agriculture Canada, London

## BOOK NOTES

Shorey, H.H. 1976. Animal communications by pheromones. Academic Press, New York, San Francisco, London. 167 pp., \$16.50.

This concise, well illustrated, and fascinating book deals comprehensively with pheromone communication and how it controls and influences behaviour within the entire animal kingdom. Little attention is paid to individual taxa, such as insects, worms, or mammals, rather emphasis is placed on generalizing concepts of diverse behaviors of animals when they are engaged in pheromone communication. The use of pheromone communication in sex, aggression, feeding, or recognition behaviors in both primitive and advanced animals is discussed. Examples of some of the interesting specific pheromone behaviors that have evolved in particular species in relation to their particular ways of life are highlighted.

Quraishi, M.S. 1977. Biochemical insect control. John Wiley & Sons Inc. New York. 280 pp. \$19.95.

The author provides a comprehensive summary of the current status of insecticides and alternative chemicals that either proved effective or are under investigation. Investigations that have resulted in the synthesis of stable analogs of pyrethrum and that show promise of producing biodegradable analogs of DDT are discussed. In addition, the author deals with the biochemistry, toxicology, mode of action, metabolism, and breakdown products of insecticides, and their effects on the environment and non-target organisms.

The first section is concerned with the better known classes of insecticides and also discusses alternative chemicals, such as hormones or pheromones, that have proved effective or show promise in control. The second section deals with the dynamics of insect toxicology and includes insecticide environment interactions and resistance and genetics of resistance. The last sections emphasize insecticides, fungicides and world economy, and integrated control and pest management.

Huffaker, C.B. and P.S. Messenger (editors) 1977. Theory and practice of biological control. Academic Press, New York, San Francisco, London. 788 pp. \$42.50.

This comprehensive volume was designed to satisfy the need for a book that covers conventional biological control achievements by major crop types and public health areas, while at the same time treating fully the basic features in the philosophy, theory, basic biology, ecology, and practice of conventional biological control, i.e., the use of natural enemies of pests — their parasites, predators, and pathogens. The book summarizes the history of man's introduction of natural enemies from foreign lands and its consequences. It also includes basic information concerning developments in other biologically based alternatives to chemical pesticides and indicates how all these approaches can be combined to establish practical integrated pest control systems that are sound both economically and ecologically.

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## BOOKS RECEIVED

Hill, D. 1975. Agricultural Insect Pests of the Tropics and their Control. Cambridge Univ. Press, New York and London. 516 pp. \$34.50.

Lavabre, E.M. (editor). 1977. Le Mirides du Cacaoyer. G.-P. Maisonneuve et Larose, Paris. 366 pp.

Linsley, E.G. and J.A. Chemsak. 1976. Cerambycidae of North America. Part VI. No. 2. Taxonomy and Classification of the Subfamily Lepturinae. University of California Publications in Entomology, Berkeley. Vol. 80. 195 pp. \$8.75.

Treherne, J.E., M.J. Berridge, and V.B. Wigglesworth (editors). 1976. Advances in Insect Physiology. Vol. 12, 348 pp. Academic Press, New York. \$28.00.



## INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE ANNOUNCEMENT

The required six months' notice is given of the possible use of plenary powers by the International Commission on Zoological Nomenclature in connection with the following names listed by case number: (see Bull. Zool. Nom. 33, parts 3 & 4, 31 March 1977).

- Z.N.(S.) 1891     *Drupella* Thiele, 1925 (Gastropoda): designation of type-species.
- Z.N.(S.) 1955     *Ditylenchus* Filipjev, 1936 (Nematoda): revised proposals concerning validation.
- Z.N.(S.) 2117     *Cotyle* Boie, 1826 (Aves, HIRUNDINIDAE): request for suppression.
- Z.N.(S.) 2141     *Rana spheenocephala* Cope, 1886, request for conservation of;  
*Rana utricularius* Harlan, 1826 and *Rana virescens* Cope, 1889, request for suppression of (Amphibia Salientia).
- Z.N.(S.) 2154     *Alburnops plumbeolus* Cope, 1865, and *Hypsilepis cornutus cerasinus* Cope, 1868: request to suppress Fowler's lectotype designations.
- Z.N.(S.) 2155     *Leptotyphlops* and *Ramphotyphlops* Fitzinger, 1843 (Reptilia: Serpentes): proposed conservation.
- Z.N.(S.) 2157     *Goniurellia* Hendel, 1927 (Insecta, Diptera, TEPHRITIDAE): designation of type-species.
- Z.N.(S.) 2159     ACYONIDAE Ameghino, 1889 (Mammalia): proposed suppression.
- Z.N.(S.) 2165     *Psammophis moniliger* var. *bilineatus* Peters, 1867: proposed suppression in favour of *P. sibilans subtaeniata* Peters, 1882 (Reptilia, COLUBRIDAE).
- Z.N.(S.) 2166     *Philodryas nattereri* Steindachner, 1870 (Reptilia, Serpentes): proposed conservation.



- Z.N.(S.) 2168 *Siphonophora* Fischer, 1823 (Bryozoa), status of: *Siphonophora* Brandt, 1837 (Diplopoda, Polyzoniida), validation of.
- Z.N.(S.) 2170 *Pieris castoria* Reakirt, 1867 (Insecta, LEPIDOPTERA): proposed suppression.
- Z.N.(S.) 2173 *Culex loewi* Giebel, 1862 (Insecta, Diptera, CULICIDAE): request for suppression so as to conserve *Toxorhynchites brevipalpis* Theobald, 1901.
- Z.N.(S.) 2174 *Chlorophis carinatus* Andersson, 1901: proposed nomenclatural precedence over *Philothamnus nigrofasciatus* Bucholz and Peters, 1875. (Reptilia: COLUBRIDAE.)
- Z.N.(S.) 2177 *Stromatoporella* Nicholson, 1886 (Fossil order Stromatoporoidea): problem of the type-specimen of the type-species, *Stromatoporella granulata* (Nicholson) 1873.
- Z.N.(S.) 2189 *Calymene variolaris* Brongniart, 1822 (Trilobita): proposed designation of a neotype.

Comments should be sent in duplicate (if possible within 6 months of the date of publication of this notice), citing case number to:

R.V. Melville,  
The Secretary,  
International Commission on Zoological Nomenclature,  
c/o British Museum (Natural History),  
Cromwell Road,  
London, SW7 5BD, England.

Those received early enough will be published in the Bulletin of Zoological Nomenclature.

The following Opinions have been published recently by the International Commission on Zoological Nomenclature:

- Opinion No. 1065 (Bull. zool. Nom. 33 (3 & 4) page 151) *Polyzonium germanicum* Brandt, 1837, conserved: *Platyulus audouinii* Gervais, 1836, suppressed (Diplopoda, POLYZONIIDAE).
- Opinion No. 1066 (Bull. zool. Nom. 33 (3 & 4) page 155) *Lyda alternans* Costa, 1859 under plenary powers given precedence over *Lyda inanis* Klug, 1808 (Insecta: Coleoptera).
- Opinion No. 1073 (Bull. zool. Nom. 33 (3 & 4) page 172.) Under plenary powers family name RIODINIDAE Grote, 1895 (Lepidoptera) to have precedence as from 1827 and ERYCINIDAE Swainson 1827 ruled invalid and placed on Official Index of Rejected and Invalid Family-Group Names in Zoology.
- Opinion No. 1075 (Bull. zool. Nom. 33 (3 & 4) page 176) *Striglina* Guenée given precedence under plenary powers over *Daristane* Walker, 1859 (Lepidoptera, THYRIDIDAE).

The Commission cannot supply separates of Opinions.

## FORTHCOMING MEETINGS

104<sup>ème</sup> Réunion Annuelle— Société Entomologique du Québec, 12 au 14 octobre 1977, Université du Québec à Trois-Rivières. Thème: l'Environnement en Milieu Urbain".

Entomological Society of Ontario, September 27-29, 1977. University of Guelph — Annual Meeting.

Entomological Society of America, November 27-December 1, 1977. Washington Hilton, Washington, D.C. — Annual Meeting.

4th International Congress of Pesticide Chemistry, July 24-28, 1977. Zurich, Switzerland. Secretary, M. Spindler, 4th ICPC, P.O. Box 182, CH-4013, Basle, Switzerland.

IX International Congress of Plant Protection, Washington, D.C. August 5-12, 1979. Dr. B.G. Tweedy, Secretary General, c/o Pesticide Coordinator, Office of Secretary, USDA, Washington, D.C. 20250 USA.

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## PERSONALIA

**Mark Goettel** (Dept. of Biology, University of Ottawa) and **Karen Toohey** (Dept. of Entomology, MacDonald College of McGill University) are the recipients of C.I.D.A. scholarships for 1978-79. Mark and Karen who are currently completing their M.Sc. will undertake a base-line data survey and biological control evaluation of vector mosquito populations in Fiji. This will be an important contribution towards the fight against aperiodic filariasis, a major health problem in the South Pacific.

**Drs. J.D. Shorthouse** and **J.R. Morris**, of the Department of Biology, Laurentian University in Sudbury have received a \$9,424.00 'Young Canada Works' grant to make a series of 'Insect Reference Kits'. The purpose of the project is to prepare 'kits' of local insects that can be made available to school teachers, and anyone interested in explaining natural history. Three university students and three high school students were hired to collect and curate specimens obtained by sweeping, pit-fall traps, window traps, and light traps in the Sudbury region.

The kits consist of a series of labelled and identified specimens in Schmitt boxes and are of themes such as beneficial garden insects, insect mimicry, aquatic insects, and common insect orders. The kits will be stored in Laurentian's 'Invertebrate Museum' and all specimens not used in kits will be incorporated into the university collection. It is expected that 12,000 specimens will be obtained before the project is completed.

The project is proving especially successful in the publicity it has attracted and has been featured on local television, cable television (French and English), and in newspapers. The project is also timely since there is increased interest in gardening now that Sudbury's pollution index is often the lowest of Ontario's industrial cities. Many species of insects which are uncommon in other parts of Ontario are now appearing in abnormal numbers. Luna moths, for example, are extremely abundant in the spring and it is common to find 10 to 15 flying about one street lamp on calm evenings.

## TECHNOLOGICAL SOVEREIGNTY

Summary of the Chairman's Statement  
Science Council of Canada  
Annual Report 1976-1977

To take its place as an equal partner in an increasingly interdependent world, Canada will need to assert *technological sovereignty* — that is, to develop and control the technological capability to support national sovereignty. Only in this way can we strengthen our technological base and, in turn, our long-term economic well-being.

In the late 19th century, Canada, as a new and immature country, found it necessary to import capital and technological know-how. In this way, the immediate needs of the country were met (e.g., generation of employment, creation of wealth). Few people paid attention to the real cost of overdependence on foreign expertise, and the creation of an indigenous technological capability was ignored.

The transfer of technology from abroad was confined mainly to information necessary for operation and production processes. Only rarely was a complete technological capability transferred — including management skills, R&D, and innovative capacity. Expertise, both managerial and technical, as well as ownership of technology, tended to remain outside the country.

During the 1960s, as government began to recognize the need for industry to develop high technology products tailored to foreign markets, flaws in the technology transfer process and the underlying structure of Canadian industry became evident. The linkages between the development of a technological capability, access to international markets, employment of skilled labour, and economic strength were better appreciated and it became apparent that our economic problems were not just cyclical.

If we are to create long-term economic stability in Canada, it is necessary to alleviate technological imbalance and the erosion of national sovereignty *per se*. Areas in which Canada needs to be technologically sovereign can be identified. We must be master of those technologies essential to survival in our physical environment; encourage the indigenous development of technologies involving natural resources, oceans and the arctic; control technologies that support national unity (e.g., transportation, communications); develop technologies in which we have historically shown excellence (e.g., nuclear energy, electrical transmission, communications).

In examining differing approaches to technological sovereignty by industrialized countries, Canada should consider an industrial structure based on *specializing* in a limited range of scientific and technological areas. If we wish to shift from our present *importation* to a *specialization* strategy, we will need to appreciate the conditions existing in countries which have found this strategy successful.

In addition to overcoming problems relating to the decentralized nature of the decision-making process in Canada, Canadians, to be successful in attaining technological sovereignty, must act in accordance with certain principles. We must encourage Canadian ownership of private firms in areas where technological sovereignty is desired; encourage technologies considered vital to Canadians; support the development of indigenous technological capabilities; encourage a small



number of highly competent, technologically-based firms of international stature; encourage the development of a range of small innovative industries; set in place major programs which will address national needs involving science and technology; strengthen basic research and expand the pool of highly-qualified manpower.

In order to implement such an industrial strategy, the monies now spent at random on non-viable activities must be channelled through major programs. These major programs, organized as large, multidisciplinary, mission-oriented projects, would provide the focus for industrial innovation and the development of management skills, in addition to fostering research.

Canada must assert technological sovereignty. The rewards are multifold: the economy will be strengthened; employment will be generated; rewarding careers in science and technology will be created. But above all, we will have the capability to solve our own problems and to strengthen the sense of Canada as a nation.



## **CORRECTION**

— to Supplement "Resource Catalog for Entomological Instruction." E.S.C. Bulletin 9(2) June 1977.

List of Transparencies. 1. (Total 1000 slides; duplication charge \$0.41/slide (photofinish quality); requested for slides usually will be entertained for a specific subject only; more extensive requests should be arranged in advance with the Information Division).