
ENTOMOLOGICAL SOCIETY OF CANADA

Bulletin



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EDITORIAL

The fight goes on! Since the beginning of 1976, research scientists and university professors have been meeting with ministers and MPs and have written letters and articles about the current research funding situation. The last week in April "Tomorrow's Biology" the national statement on basic biology in Canadian Universities was presented to the federal government and the press. This document was put together by the Biological Council of Canada, the Canadian Committee of University Biology Chairmen, the Canadian Federation of Biological Societies, under the auspices of the Science Council of Canada. "The purpose of this statement is to reveal the current inadequate level of funding of basic biological research carried out in departments of biology at Canadian Universities, and to recommend relief from the consequences."

Two sections are of particular interest: (1) justification for support of research in biology, i.e. benefits to society, and (11) the scope of and requirements for biological research. They are interesting by what they are deficient in. Although it is difficult not to agree with the benefits listed, one must point out that this section was far too mild in terms of examples. The restricted nature of the list of problems undoubtedly reflects the position of individuals involved in preparation of the brief. Throughout the text they emphasize Canadian problems yet end up with (1) cell biology problems and (11) ecological problems which are rather restrictive if not of limited interest. This points out the need for a broader and more representative effort in the search for solutions to the problems of Canadian biology.

In terms of actual funding, the brief emphasizes the following: "It has been calculated that a 1974 operating grant would buy 41 per cent less research than a 1969 grant."

"A typical grant for a full-trained biologist starting independent research in a Canadian University should often approach \$10,000, and yet 62 per cent of all grantees in biology received less than this amount in 1974."

"Taking 1969 as a base line, a mere updating which corrects for seven lean years gives a 1976 Remedial Budget of \$19.9 million."

"Tomorrow's Biology" puts the emphasis on university research funding. However, the problems discussed in this brief are not just university problems. Scientists in government research institutions are as well, if not more, affected by monetary restrictions. One has to think only of the limitations placed on attendance to scientific meetings by the Treasury Board. Moreover, the role of industry has also been left out of the report.

Members of the ESC should try and read this document to get a more complete picture of the inadequacies of current research and development policies. They should also take the time to send their comments to the Science Policy committee of the Society.

ATTENDANCE AT NON-GOVERNMENTAL CONFERENCES

Following is an exchange of correspondence between Dr. George Cooper President of the ESC and the Hon. Jean Chrétien, President of the Treasury Board. Dr. Cooper also wrote to the Prime Minister. At the time of going to press Mr. Trudeau's reply had not yet been received.

Editor

The Honourable Jean Chrétien
President, Treasury Board
Government of Canada
Place Bell
OTTAWA, Ontario K1A 0R5

April 20th, 1976

Dear Mr. Chrétien:

As President of the Entomological Society of Canada I wish, on behalf of all members, to strenuously protest the restrictions outlined in section "C: Conferences" of Circular No. 1976-2, T.B. No. 740-686, dated January 22nd, 1976.

Our Society has over 900 highly trained entomologists, and throughout the past their research efforts have contributed greatly to Canada's position as one of the leaders in world production of food and fibre. The free exchange of ideas and the understanding of all of the insect problems we face are essential if present and future solutions to our problems are to be found. Attendance at our annual meeting provides an unique opportunity for the entomologists of government, university, and industry to meet and exchange the necessary information.

It is our contention that if opportunities are not provided to bring together entomologists from all segments of Canada for discussion and exchange of information, there is a grave danger that Canada will not be able to solve its own pressing entomological problems and the productivity of our farms and forests will rapidly decline.

If the terms of your minutes are enforced, not only will the entomologists themselves be denied the opportunity of participating in scientific dialogue, but the entire scientific community will be in jeopardy. I would, therefore, request that restrictions as defined in the directive T.B. No. 740-686 as applied to conference attendance, be reconsidered and amended in an appropriate manner which would permit attendance at vital Canadian non-governmental conferences.

As an entomologist employed by industry, I find it very difficult to rationalize the reasoning behind T.B. No. 740-686, as it applies to conference attendance. We in industry appreciate the value of attending scientific meetings, and would be outraged if we were denied the right to attend meetings of the scientific societies to which we may belong. Many of the solutions to our past problems were first conceived through discussion and free exchange of ideas.

I would again ask that you give careful consideration to this matter, and request an early and favourable reply.

Yours very truly,
(Sd) G.S. Cooper, Ph.D.
President

May 11, 1976

Dr. G.S. Cooper,
President,
Entomological Society of Canada,
Plaza One — 2000 Argentinia Road,
Mississauga, Ontario.
L5N 1P7

Dear Dr. Cooper:

Your letter to the Honourable Jean Chrétien dated April 20, 1976 in which you seek reconsideration of the restriction on attendance by public servants at non-governmental conferences has been passed to me for reply.

I am pleased that your Society values its working relationship with the Federal Government through contact and liaison with members of the Public Service. I am sure that the Government, through its employees, also benefits from the exchange of ideas and the presentation of papers which takes place during your Society's annual meetings. I would hope that this mutually beneficial exchange will continue and prosper in the future.

However, in accordance with the general principles of the Government's economic program calling for a nation-wide attack on inflation, it is essential that significant restraints in government spending be applied. Among other measures, a number of perhaps unpopular limitations have had to be placed on our administrative practices and procedures, attendance at non-governmental conferences being one of these. We are of the opinion that departmental objectives can generally be met if the various departments and agencies participating in a conference are each represented by one knowledgeable person from the particular professional or specialized field concerned. This person could provide information on related developments in his department and, following a conference, could brief his colleagues on the proceedings and discussions, distributing notes and literature as appropriate.

While I am confident that this procedure will meet government needs in respect of most conferences, it is recognized that there might well be exceptions requiring some relaxation of the limitations imposed by Treasury Board Circular 1976-2. A department may, therefore, request Treasury Board authority to send additional representatives to a particular conference if it believes that, because of its special need, increased representation is required. When such a need is substantiated, you may be assured that the Treasury Board will approve the additional representation necessary.

I sincerely hope that this practice will avoid any duplication of effort, both intra- and inter-departmentally without restricting essential representation from those departments with exceptional requirements. For this reason and in view of the Government's commitment to restrain administrative and other expenditures, Mr. Chrétien is not prepared at this time to modify the directive as you have suggested. The effect of the policy is, however, being monitored closely and if it appears that more flexible procedures can be introduced without impairing the objectives of the policy, this will no doubt be done.

In closing, may I say that Mr. Chrétien is most appreciative of your concern for the efficacy of Canada's effort in the entomological field and for the advice you have tendered.

Yours sincerely,
(Sd) Pierre Fortin,
Executive Assistant.

ENTOMOLOGICAL SOCIETY OF CANADA
GOLD MEDAL



AWARDED TO

Bryan P. Beirne

Dr. Bryan Patrick Beirne has been awarded the Entomological Society of Canada Gold Medal for Outstanding Achievement in Canadian entomology. Presentation will be made in October, 1976 when the Society holds its annual meeting in Toronto with the Entomological Society of Ontario.

Dr. Beirne received his university training at Trinity College, Dublin (University of Dublin) B.Sc. with honours (1938); Ph.D. (1940); M.Sc. (1941) and M.A. (1942). Between 1942 and 1949 he was Lecturer in Entomology at Dublin University and in private business in various capacities as pest problem consultant to government, legal and industrial firms. In 1949 Dr. Beirne joined the Entomology Research Institute in Ottawa and specialized in the taxonomy of Homoptera. In 1955 he was appointed Director of the Entomology Research Institute, Belleville and since 1967 has been Director of the Pestology Centre, Department of Biological Sciences, Simon Fraser University.

A productive researcher, teacher, and scholar of insect taxonomy, biological control, evolution, entomological techniques and agricultural entomology, Dr. Beirne has authored over 140 papers and several books. He has done extensive research on the taxonomy and morphology of British Microlepidoptera including basic work on the morphology of genitalia. Early in his career he completed a pioneering study on the cephalic structures and spiracles of the final instar larvae of the Ichneumonidae which has stimulated the development of taxonomy of immature Hymenoptera and its use in applied entomology. After coming to Canada he further demonstrated his versatility by becoming an expert in the taxonomy of Homoptera and publishing on the leafhoppers of Canada and Alaska and the Cicadas and treehoppers of Canada. Dr. Beirne throughout his career has by his writings and numerous invited presentations before scientific and professional bodies influenced the development of pest management programs in many parts of the world. His book on pest management has been a major factor in the recognition of this new field of applied biology.

In addition to his many research papers on insects of agricultural importance he has recently completed a two volume monograph of the insect pests of annual crop plants in Canada. Dr. Beirne has found time to be active in national and international biological affairs and has served on many committees at home and abroad furthering the interests of entomology and the pest management concept.

Dr. Beirne is the fifteenth recipient of the Society's Gold Medal Award.



C. GORDON HEWITT AWARD

Bruce S. Heming

Dr. Bruce S. Heming has been awarded the Entomological Society of Canada C. Gordon Hewitt Award for outstanding achievement in Canadian Entomology. The presentation will be made in October 1976 when the Society holds its Annual Meeting in Toronto with the Entomological Society of Ontario.

Dr. Heming obtained his Ph.D from North Carolina State University, Raleigh, in 1968. Since then he has served with the Department of Entomology, University of Alberta, 1968-1973 as Assistant Professor and from 1973 to present as Associate Professor. In 1974 he was on sabbatical leave at the Department of Entomology, Agricultural University, Wageningen.

Dr. Heming has made distinguished contributions to Canadian entomology by the excellence of his remarkably executed and detailed studies of the ontogeny, structure and function of various organ systems of Thysanoptera and their implications for understanding the phylogeny of thrips. His studies of the reproductive system of males and females of representative genera trace development of the organs, both internal and external, through all instars from hatching to the adult. They provide an important body of fact for assessing the nature of the "pupal" instars of the Thysanoptera and for comparing the metamorphosis of these insects with that of the endopterygotes. These studies have been published in six major papers and, with other shorter papers, demonstrate an admirable record not only as a researcher but also as a teacher of general entomology, economic entomology and insect development.

Dr. Heming is the second recipient of the C. Gordon Hewitt Award given to those under 40 years of age who, like C. Gordon Hewitt, made an outstanding contribution to Canadian entomology.

ENTOMOLOGICAL SOCIETY OF CANADA POSTGRADUATE AWARD

Mr. Gerald J. Hilchie, Department of Entomology, University of Alberta, is the first recipient of the Entomological Society of Canada Postgraduate Scholarship of \$500.00

ENTOMOLOGICAL SOCIETY OF CANADA

Gold Medal for Outstanding Achievement in Canadian Entomology and The C. Gordon Hewitt Award

Members of the Society are invited to nominate persons whom they regard as eligible for these awards. Nominations should be sent to the Achievement Awards Committee, Entomological Society of Canada, C/O Dr. George Gerber, Secretary, Research Station, 195 Dafoe Road, Winnipeg, Manitoba, R3T 2M9, in an envelope marked "Confidential" and should include: (1) the name and address of the nominee(s); (2) a statement of relevant achievements with supporting documentation; and (3) the name of the nominator and at least one seconder. To be considered by the Achievement Awards Committee, nominations must bear a postmark no later than 30 November, 1976.

The following conditions govern these awards:

- Outstanding contributions should be judged on the basis of
 - (a) superior research accomplishment either as a single contribution or as a series of associated endeavours and which may be either in entomology or a related field where the results obtained are of great consequence; or
 - (b) dedicated and fruitful service in the fields of Society affairs, research administration, or education.
- No more than one of each award shall be granted per year but, where circumstances warrant, more than one individual may be mentioned in a single award.
- Recipients need not be members of the Society providing their contribution is judged to have a major impact on entomology in Canada.
- Each award may be granted on different occasions to the same recipient but for different contributions to entomology in Canada.
- nominee for the C. Gordon Hewitt Award must be less than 40 years of age throughout the calendar year in which the award is both announced and awarded.

ACTIONS OF THE GOVERNING BOARD
30-31 MARCH 1976

NRC Publications Grant:

- (1) Noted that the Society would not be receiving a Publications Grant from NRC for 1976-1977.
- (2) Approved that the Society meet all existing commitments to Authors under the conditions of the NRC Publications Grant for 1975-1976. The Society will cover the page charges for those manuscripts where the Editor has already given firm commitment in writing that page charges will be paid from the NRC Grant.
- (3) Requested that letters be sent to the Members of the Society indicating that the NRC Publications Grant had been cut off, and asking Authors, who had submitted manuscripts during the period of the Grant, but were not accepted by the Editor, if they wanted to withdraw their manuscripts or to pay for the publication costs themselves.

NRC Appointments:

- (4) Approved the following nominations for NRC Grant and Scholarship Selection Committees: Dr. R. Brust, Dr. F.L. McEwen, Dr. E.G. Munroe and Dr. A. Comeau.

Canadian Entomologist:

- (5) Provided secretarial assistance to the Editor on a half-time basis, so that he can improve communications with the Members of the Society, Governing Board and Executive Committee and can improve the handling of manuscripts submitted to the Canadian Entomologist.
- (6) Requested the Editor to improve his system for handling manuscripts submitted to the Canadian Entomologist and to improve communications with Authors.

Bulletin:

- (7) Approved that the Bulletin Editor accept only non-commercial advertising which is consistent with the objects of the Society and shall not charge a fee.

Common Names of Insects:

- (8) Agreed that the Society obtain copies of the revised List of Common Names of Insects from the Quebec Department of Agriculture and distribute them to the Members of the Society.

Achievement Awards:

- (9) Announced the award of the Society's 1976 Gold Medal to Dr. Bryan P. Beirne. Dr. Beirne is the fifteenth recipient of the Gold Medal.
- (10) Announced that the second recipient of the C. Gordon Hewitt Award is Dr. Bruce S. Heming.

Fellowships:

- (11) Approved a design for the fellowship certificate, containing embossed printing and latin wording. The certificates will not be mounted in frames.

Finance:

- (12) Approved a uniform fee be charged as Annual Dues for all Regular Members of the Society regardless of whether they belong to an Affiliated Society.
- (13) Agreed that the Society will continue to collect Annual Dues for those Affiliated Societies that ask the Society to do so.
- (14) Approved that the accumulated surplus for 1975 (\$25,000.00) be reinvested to protect the future low membership fee and future manoeuvrability of the Society.
- (15) Requested the Membership Committee attempt to get a larger number of Sustaining Members than the Society has at present.
- (16) Agreed to recommend to the Membership at the 1976 Annual Meeting that Regular Membership Dues be increased to \$25.00 effective 1 January 1978 and the Sustaining Membership Dues be increased to \$250.00 effective 1 January 1977, the latter being based on the idea that it be 10 times the Regular Membership Dues.
- (17) Requested the Publications Committee to improve the presentation of the Sustaining Members on the cover of the Canadian Entomologist.

Scholarship Awards:

- (18) Announced that the first recipient of the Entomological Society of Canada Scholarship is Mr. Gerald J. Hilchie, Department of Entomology, University of Alberta.

Science Policy:

- (19) Agreed the Society would not participate in the proposed Canadian National Committee on Microbiology.
- (20) Agreed the Society would participate in the Canadian Committee of the International Association on Water Pollution Research. The Society will contribute \$50.00 annually to this committee.
- (21) The Extension Study Committee was given approval to proceed.
- (22) Agreed that the Ad Hoc Committee on Funding on University Research in Entomology should proceed.
- (23) Announced that the Man Power Study is completed and was submitted to the Department of Supplies and Services on 31 March 1976. The results will be announced later at a news conference.
- (24) Noted that the Committee on Biological Survey of Insects of Canada have almost completed the final draft of the contract which will be submitted to the Department of Supplies and Services for funds to carry out the survey.
- (25) Recommended that the Science Policy Committee initiate a study on Entomology in Government Departments.
- (26) Requested the Science Policy Committee proceed with a study on Canada and International Entomology.

By-Laws:

- (27) The revised By-Laws were accepted. The By-Laws will be voted on by the Members of the Society in a referendum.

Future Meetings:

- (28) Noted progress of plans for the 1976 meeting in Toronto and the 1977 meeting in Winnipeg.
- (29) Approved the holding of an annual meeting in 1978 independent of an Affiliated Society. The meeting will be held in Ottawa, and Dr. B.J.R. Philogène was appointed chairman of the meeting.

- (30) The President was requested to send letters to Prime Minister Trudeau and Honourable Mr. Chrétien protesting the decision of Treasury Board which restricts the attendance of government employees at meetings to one per department.

Membership:

- (31) Membership Committee requested to look into the feasibility of having membership certificates.
(32) Requested that a membership list be prepared.



**NOMS FRANCAIS D'INSECTES AU CANADA
FRENCH NAMES OF INSECTS IN CANADA**

La quatrième édition de cette liste trilingue (latin, français et anglais) de 214 pages, est maintenant disponible. Outre les quelque 200 corrections des noms français et latins en particulier, cette nouvelle édition comporte 348 nouveaux genres et 866 nouvelles espèces, soit une augmentation de 75 pourcent comparativement à l'ancienne édition de 1964. Cette liste de 2026 espèces, majoritairement d'insectes, renferme plusieurs espèces de nématodes, mollusques, diplopodes, chilopodes, symphyles et acariens.

Cette nouvelle édition est compilée et éditée par l'entomologiste Paul Benoit, Ph.D., du Centre de Recherches forestières des Laurentides, Environnement Canada. Cependant, ce répertoire est publié par le ministère de l'Agriculture du Québec. Il est disponible, par l'entremise du Service de l'Information, Agriculture Québec, Québec.

The fourth edition of this trilingual list (Latin, French and English) of 214 pages, is now available. Besides some 200 corrections, mainly to Latin and French names, the list includes 348 additional genera and 866 additional species, which is a 75 percent increase over the 1964 edition. The list of 2026 species, mainly insects, contains also many species of nematodes, molluscs, diplopods, chilopods, symphylids and acarids.

The new edition is compiled and edited by Paul Benoit, Ph.D., entomologist at the Laurentian Forest Research Centre, Environment Canada. However, this book is published by the Quebec Department of Agriculture. It is available through the Service de l'Information, Agriculture Québec, Québec.

RECENT DEATHS

BRIMLEY, J. Frank, Sr. Wellington, Ont. On 6 January 1976, age 92. Emeritus member ESC, active member ESO, member since 1912. Amateur coleopterist, hemipterist.

COMEAU, Noel. Québec, Qué. On 25 February 1976. Active member ESQ. Retired Curator of Zoology, Provincial Museum; devoted to work of l'Abbé L. Provancher.

DOMINICK, Richard B. McClellanville, S. C. On 4 May 1976, age 56. Active member ESC. President, Wedge Entomological Research Foundation (publisher of *The Moths of America North of Mexico*).

MORRISON, Frank O. Ste. Anne de Bellevue, Qué. On 2 May 1976, age 66. Active member ESC, ESO, ESQ. Professor, Macdonald College. Former President ESC, ESQ.

PARENT, Benoit. St. Jean, Qué. On 16 March 1976, age 52. Active member ESC, ESO, ESQ. Research scientist, Agriculture Canada.

REMPEL, J.G. Victoria, B.C. May 30, 1976. Age 73. Honorary member, gold medalist ESC. Member ESS. Retired professor, University of Saskatchewan.

RIORDON, Derek F. Summerland, B.C. on 31 January 1976. Active member ESC, ESBC. Research scientist, Agriculture Canada (formerly at Belleville, Ont.).

SCOTT, H. Eldon. Raleigh, N. C. On 18 September 1975, age 59. Active member ESC, ESO. Extension entomologist, North Carolina State University.

Note: Members of the society are kindly requested to inform the editor about recently deceased entomologists.

NOTICE OF MEETING

The 1976 Annual Business Meeting of the Entomological Society of Canada will be held at Toronto, Ontario, Tuesday afternoon, 26 October. Matters for the consideration of the meeting or of the Governing Board should be communicated to the Secretary, Dr. G.H. Gerber, Research Station, Agriculture Canada, 195 Dafoe Road, Winnipeg, Manitoba, R3T 2M9.

BENOIT PARENT

1922-1976

Le 16 mars 1976, nous apprenions tous avec regret le décès de Monsieur Benoît Parent. Après les assises d'une réunion du Conseil des Productions végétales du Québec, tenues les 9 et 10 mars à la Faculté des Sciences de l'Agriculture et de l'Alimentation à Québec, Monsieur Parent a été terrassé par une crise cardiaque qui, malheureusement, devait être fatale.



Né à Saint-Prospère de Dorchester, Monsieur Parent avait complété ses études classiques au Collège de Saint-Anne-de-la-Pocatière et, après l'obtention du baccalauréat ès arts en 1944, il s'inscrivait à l'École Supérieure d'Agriculture en cette même localité. En 1948, il obtenait le baccalauréat ès sciences agricoles de l'Université Laval et, à la suite d'études post-graduées en entomologie, l'Université de Montréal lui décernait le titre de maître ès sciences en 1952.

Monsieur Parent est entré au service du Ministère de l'Agriculture du Canada en 1949 et il est vite devenu un membre très actif au sein de l'équipe de spécialistes de la Station de Recherches de Saint-Jean affectés à la protection des cultures fruitières. Avec beaucoup de zèle et d'application, il a poursuivi des études écologiques sur les acariens phytophages et il a mis au point des méthodes de lutte intégrée contre ces ravageurs et aussi contre les cochenilles et les pucerons. Il a rédigé près d'une soixantaine de publications tant d'ordre technique que scientifique. Tout en poursuivant ses travaux, il était en train de parachever une thèse de doctorat à l'Université de Montréal.

Membre actif de plusieurs sociétés professionnelles et scientifiques, Monsieur Parent a été appelé à assumer la présidence de l'Ordre des Agronomes du Québec, section de Montréal, de 1966 à 1968, de la Société de Protection des Plantes du Québec en 1970-1971 et de la Commission de la Défense des Cultures en 1975. Comme membre de la Société entomologique d'Amérique, il avait été délégué à la réunion annuelle tenue à Los Angeles, Californie, en 1971. De même, il avait été choisi comme délégué officiel du Canada au IV^e Congrès international d'Acarologie qui eut lieu en août 1974 en Autriche.

Son dévouement à la cause de l'agriculture lui avait valu une profonde estime de la part des collègues, des agronomes et des agriculteurs eux-mêmes. En même temps que tous ces gens, nous déplorons son départ prématuré et nous offrons de sincères condoléances à son épouse, ses deux filles et son fils qui lui survivent pour honorer sa mémoire.

R.O. Paradis
Saint Jean, Qué.

J. FRANK BRIMLEY, SR.



J. Frank Brimley, Sr., one of Canada's "old time" naturalists, died 6 January 1976 in Wellington, Ont., after a brief illness. Born in 1883 in London, England, Mr. Brimley emigrated to Ontario in 1909 with his wife and daughter. Arriving by train at Tweed, Ontario, it was too late to catch the train to Wellington, so Mr. Brimley and his family spent the night at the station.

He worked on a farm in Prince Edward County, Ontario, for the first 11 years, then in a local canning factory and on the railroad. Except for one year in Rainy River and two years at Hamilton, Mr. Brimley lived near or in Wellington. In 1928 he purchased a grocery store in Wellington and lived above the store until his death. His only son, Frank, Jr., took over the store several years ago, however, Mr. Brimley continued to help him until it was sold in 1974.

Mr. Brimley's interest in nature began in England, where he started collecting insects as a young boy. After emigrating to Ontario, he continued to collect, specializing for the most part in Coleoptera and Hemiptera-Homoptera (excluding the soft bodied species). He amassed a pinned collection of about 40,000 beetles representing about 5000 species and 10,000 bugs (about 1,000 species), all from Canada and the United States; much of this material is identified to species. Besides the pinned material he had 25,000 beetles and 18,000 bugs in papers, most of which consisted of named duplicates collected locally. Every spare minute was spent in his "bug room" and one can imagine how much larger his collection might have been if he had had a regular 8-hour/day job instead of operating a country grocery store! His collection was bequeathed to the Canadian National Collection of Insects, Ottawa, and is now being incorporated.

Mr. Brimley was an avid trader and a look at his collection indicates that he exchanged beetles and bugs with a great many of the entomologists of his time, professional or amateur, in North America. Also, over the years Mr. Brimley contributed many specimens to the CNC. Most of the material he collected bears the familiar "Pr. Edw. Co., Ont." label, although he did spend a month or two in Florida during several winters and one year in the Rainy River District, Ont. He collected many "first records" for Canada, especially in the Hemiptera-Homoptera. Unfortunately he did not report most of this information, other than by placing the specimens in his collection. Mr. Brimley was Canada's oldest active entomologist and was identifying beetles for others up until five months before he died.

Many, many years ago, before the automobile was common, Mr. Brimley was asked to prepare an exhibit for the Dominion Day celebration at the Town Hall. A wagon was used to transport the exhibit and the horse ran away upsetting the wagon. Children and others helped pick up the scattered boxes and pinned insects. Another exhibit was prepared and this time Mr. Brimley used boys to pull the wagon.

A naturalist at heart, a favorite pastime was watching ducks and other wildlife from the porch of his cottage overlooking Lake Ontario. His copy of the Faunal Investigation of Prince Edward County (his 1941 paper is a part of this) is well worn and has many notes on the margins particularly the section on birds.

Predeceased by his wife (1963), Mr. Brimley is survived by two daughters, a son, and several grandchildren and great-grandchildren.

As far as I can determine, the following is a list of Mr. Brimley's publications:

1929. Random notes on the insects of the Rainy River District. *Can. Field-Nat.* 43: 27-28. (Notes on various interesting species).
1929. Hemiptera found in the Rainy River District. *Can. Field-Nat.* 43: 28-30. (A list of 113 Hemiptera and 21 Homoptera identified to species).
1930. Coleoptera found in the Rainy River District, Ont. *Can. Field-Nat.* 44: 135-140. (A list of 584 beetles identified to species).
1941. A list of the long-horned beetles (Cerambycidae) of Prince Edward County, Ontario. *Univ. Toronto Studies, Biol. Ser.*, No. 48: 120-123. (Brief collecting data on 97 species).
1951. Mordellidae of Prince Edward County, Ontario (Coleoptera). *Can. Ent.* 83: 278-279. (Brief collecting data on 33 species).
1961. Notes on the Membracidae (Homoptera) of Prince Edward County, Ontario. *Can. Field-Nat.* 75: 12-15. (Field notes on 45 species).

E.C. Becker

The April 1976 issue (Vol. 38, No. 4) of the *American Biology Teacher* is entirely "devoted to the subject of entomology and its use in the biology classroom". In addition to the editorial "Why Entomology" the issue has 12 articles covering such topics as "Insects and Human Welfare", "Rearing insects in the classroom", "Insect abundance", "Chemical insecticides", "Integrated Pest Management" and "Entomologists at work". Single copies are available at \$1.75 each, from: National Association of Biology Teachers, 11250 Roger Bacon Dr., Reston, VA 22090, USA.

"A la rigueur nous pouvons ignorer certains animaux, et en abandonner la connaissance aux spécialistes . . . Mais il est impossible de ne pas connaître au moins l'existence des insectes. Nous les rencontrons partout, et dans les milieux les plus divers . . . Si nous n'allons pas au-devant d'eux d'ailleurs, ils se chargent de nous rejoindre . . ."

L. Berland, 1962,
Les Insectes et l'Homme,

SIXTH ANNUAL INSECT PHOTO SALON
ENTOMOLOGICAL SOCIETY OF CANADA

25-27 October 1976

Members of the Entomological Society of Canada and biological photographers are invited to submit black and white prints, color prints and slides of insects, related arthropods, insect damage, nests, tracks, etc. for exhibit at the Toronto, Ontario, meeting.

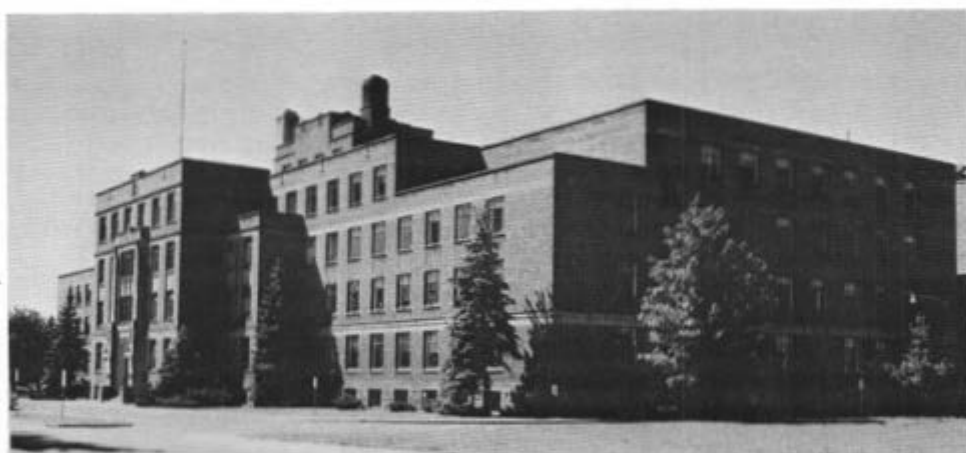
Award certificates and ribbons will be presented to the winners in each category. The best overall entry will be awarded a best in salon certificate. There will be a public showing of all submitted photos and a slide show during the meetings. The names of the winners will be announced in a future issue of the Bulletin of the Entomological Society of Canada.

Conditions of Entry

1. Subject: Entomology in the broad sense.
2. The competition is open to amateur and professional photographers.
3. Four categories: a) Black and White Prints; b) Color Prints; c) Color Slides; d) photomicrographs.
4. Prints must be 8" x 10" or larger, mounted on 11 x 14" cards.
5. Entries may not exceed 4 photos per person, including slides and prints.
6. All photos should be titled on the subject identified. Sender's name should be on the reverse side.
7. Judging will be completed before the meeting.
8. A completed entry form or a facsimile must accompany each entry and sent to H.J. Herbert, Research Station, Kentville, N.S. B4N 1J5
9. Entries must be postmarked 13 September or earlier.
10. Entry fee is \$1.50 per person.
11. Entries will be returned only if accompanied by a self-addressed envelope and return postage. Foreign entries should be identified to clear Canadian customs. It should be stated on the parcel that the photographs are not for sale, but only for exhibition before a scientific society, the Entomological Society of Canada, and are to be returned to the sender. Make cheques or money orders payable to H.J. Herbert. Foreign entrants should send 50¢ to cover return postage.
12. Entries will receive every possible care but neither the Entomological Society of Canada nor the Insect Photo Salon committee will be responsible for loss or damage.

ENTRY FORM	SIXTH ANNUAL INSECT PHOTO SALON
Name
Street
City	Province/State
Postal Code	Member Ent. Soc. Canada
Fee enclosed \$	+ return postage

THE HISTORY AND OBJECTIVES OF THE BIOSYSTEMATICS RESEARCH INSTITUTE



The K.W. Neatby Building at the Central Experimental Farm, which houses the entomologists, nematologists, and arachnologists, and their associated collections.

The Research Branch of the Federal Department of Agriculture maintains a network of nearly 50 research establishments extending from coast to coast in Canada. Six of these, mostly located in Ottawa, have programs devoted to more fundamental aspects of research. The Biosystematics Research Institute located on the campus of the Central Experimental Farm in Ottawa is one of these. Our function is to conduct taxonomic research on a broad spectrum of plants and animals and to operate an identification service relating to these organisms. We make determinations for various government departments, for universities and for individuals. We maintain taxonomic expertise in four principle areas, the terrestrial arthropods, the nematodes, the vascular plants and the fungi. The history of our Institute is really the history of the development of our collections and those workers associated with them.

Federal government involvement in botany and entomology had parallel beginnings with the appointment of one individual. James Fletcher a young Englishman in the employ of the Bank of British North America was posted to Canada from London in 1874. Two years later he resigned from the bank to accept a position as accountant in the Library of Parliament. During the next few years Fletcher developed a great interest in natural history and became very active in both botanical and entomological circles. Presumably in recognition of his expanding competence, he was named Entomologist in the Dominion Department of Agriculture in 1884. Two years later the Experimental Farms Branch was organized and another distinguished pioneer entomologist, William Saunders was named as its director. James Fletcher's position was incorporated into the new branch and he was given the title of Entomologist and Botanist. Fletcher served in this position until he died in 1908 at the age of 56. Shortly before his death, Fletcher hired two assistants, Herbert Groh who subsequently became prominent in the Division of Botany, and Arthur Gibson who subsequently served as Dominion Entomologist. With Fletcher's death, botany and entomology in the federal service parted company for a period of 65 years. In 1909 Dr. C. Gordon Hewitt was appointed Dominion Entomologist and Dr. H.T. Gussow, Dominion Botanist. I shall first follow the evolution the entomology within the Department of Agriculture.

Organizing Entomology

In 1914, Gordon Hewitt was successful in establishing his embryonic entomological forces as a separate branch, the Entomological Branch, parallel to the Experimental Farms Branch within the Department of Agriculture. Within his new structure he created four divisions: the Division of Field Crop and Garden Insects, the Division of Forest Insects, the Division of Foreign Pest Suppression and lastly but not least importantly, the Division of Systematic Entomology. Dr. James H. McDunnough was appointed as chief of the Division of Systematic Entomology in 1919, and was charged with the responsibility of Developing the Canadian National Collection of Insects.

But let us recapitulate for a moment to see what the Canadian National collection consisted of in 1919. Fletcher donated his personal collection to the department when he was named Entomologist and Botanist. During the next fifteen years, the collection grew rapidly as the result of the work of Arthur Gibson, assistant to Fletcher and from donations by enthusiastic collectors in both eastern and western Canada. By 1909 it occupied between 150 and 200 drawers in addition to much unworked material housed in storage boxes.

However, during this same period another insect collection was developing in the Biological Division of the Geological Survey. This had received material from a number of sources: specimens collected by officers of the Geological Survey, insects collected during the Canadian Arctic Expedition of 1913-18, and specimens contained in private collections that had been purchased. The latter included the Geddes, Evans, and Young collections. The collection belonging to the Geological Survey was housed within the National Museum but it had no curator and its various components had never been amalgamated.

In 1915, Hewitt was named Honorary Curator of Entomology in the National Museum and in the same year plans were developed for amalgamating the Agriculture collection and the Museum collection at the National Museum.

But in 1916 the Parliament Buildings burned down and the parliamentarians moved to the National Museum. Because of the resulting congestion, the Museum insect collections were moved to the Birks Bldg., headquarters of the Entomological Branch, and merged into the Agriculture collection. The Canadian National Collection of Insects has been the responsibility of the Department of Agriculture since that time.

When Dr. McDunnough was appointed as Chief of the Division of Systematic Entomology in 1919, his division consisted of himself and one laboratory assistant. By 1926 he had in addition to himself a Hymenopterist and a Dipterist, three laboratory assistants and a clerk-stenographer. McDunnough was fortunate, however, in being able to call on the services of a number of officers from entomological field establishments who were taxonomists in their own right.

In 1938, federal government entomology lost its exalted position as a Branch in the Department of Agriculture and became a Division within the newly formed Science Service which was parallel within the Department to the Experimental Farms Service. Systematic entomology was retained within the new Division as the Systematic Entomology Unit, with McDunnough as its Head. When McDunnough retired in 1946, he had a professional staff of six in addition to himself.

In 1948, G.P. Holland was appointed Head of the Systematic Entomology Unit, and under his leadership taxonomy underwent a period of great expansion; by 1953 there were 20 professional taxonomists employed in the Unit, and an estimated two million specimens in the Canadian National Collection. Dr. Holland assumed responsibility for a biological control laboratory in Belleville in 1955 and the Unit was retitled the Insect Systematics and Biological Control Unit.

The Entomology Research Institute

In 1959 the Experimental Farm Service and Science Service were amalgamated to form the Research Branch in the Department of Agriculture. The establishment at Ottawa with Dr. Holland as Director was retitled The Entomology Research Institute. Ten years later, Holland, for health reasons, stepped down as Director, but he remains at our Institute as a specialist in the Siphonaptera. When he assumed leadership of the unit it had a complement of six scientists; when he left the directorship of the Institute, it had a professional staff of 45, 30 of whom were taxonomists. During his tenure, the Canadian National Collection of Insects had grown from a probable one million specimens in 1948 to an estimated seven million specimens in 1969.

W.B. Mountain was appointed Director of the E.R.I. in 1969. He reorganized the Institute and arranged for the transfer to other establishments of staff members who were primarily interested in agricultural entomology and apiculture. A residual group of insect physiologists and geneticists were organized to constitute an experimental taxonomy section whose objectives I shall mention later. Dr. Mountain was appointed Assistant Director General, responsible for Institutes in 1973, and in the same year I was appointed Director of the Entomology Research Institute.

The Botany Story

Now let us return to the botany story with the appointment of Dr. Gussow as Dominion Botanist in 1909. At the beginning, his Division consisted of a single assistant, Herbert Groh, and himself. During his 35 years of service, Dr. Gussow gradually added to his staff and established branch laboratories across the country. By 1921 he had established laboratories at Charlottetown, P.E.I., Fredericton, N.B., St. Catharines, Ontario and Saskatoon, Sask., and his total divisional staff had grown to 26 permanent employees. Gussow never divided his Division into functional units, but he did recognize operational areas which in 1921 he defined as economic botany, forest pathology, mycology, and plant pathology. By 1937 Gussow had established a total of 10 branch laboratories and had a total professional staff of 78.

In 1938 the Division of Botany was removed from the Experimental Farms Service and transferred to the newly established Science Service, and its name was changed to the Division of Botany and Plant Pathology.

Dr. Gussow retired in 1944. He was succeeded as Chief of the Division by Dr. J.H. Craigie, famous for his research in wheat rust, who served until 1952.

In 1951 the Ottawa staff of the Division of Botany and Plant Pathology was organized into three units, the Botany Unit, the Mycology Unit and the Plant Pathology Unit.



The William Saunders Building at the Central Experimental Farm, which houses the vascular plant botanists and mycologists and their associated herbaria.

With the amalgamation of the Science Service and the Experimental Farm Service to form the Research Branch in 1959, most of the Ottawa personnel of the Botany and Plant Pathology Division became part of the newly formed Plant Research Institute.

At the time that Dr. Gussow was appointed, he became responsible for the development of the Department of Agriculture herbarium. This collection had as its nucleus the private collection of James Fletcher, consisting of 3,000 sheets, which Fletcher had donated and added to during his term in office. John Macoun of the National Museum, who first bore the title of Dominion Botanist, had also donated a sizeable collection of duplicates to the Agriculture herbarium. During the first decade that Gussow was in office the vascular herbarium grew slowly at a rate of several hundred accessions a year. The growth resulted from his own collecting and that of Faith Fyles, an early assistant who had among her responsibilities herbarium development. A number of small donations were also received, including one from Mrs. Wm. Saunders and one from W.H. Brittain.

In 1915 John Adams was appointed Assistant Dominion Botanist and he was given primary responsibility for vascular plants and the development of the herbarium.

In 1924 the herbarium had a total of 6,128 accessions and by 1930 this had increased to 9,293. In 1938, the same year in which the Division was transferred to the Science Service, Dr. H.A. Senn was hired as systematic botanist and the herbarium began to grow at an accelerated rate. By 1941 it had 39,562 accessions and by 1951, 192,840.

In 1951 when the Botany Unit was formed at Ottawa within the Division of Botany and Plant Pathology, Dr. Senn was named its Head; he had a professional staff of 12, of which ten were taxonomists. The vascular herbarium became the responsibility of his Unit, and entered into a period of even more rapid growth; by 1961 it contained 415,309 accessions.

In 1959, with the formation of the Plant Research Institute within the Research Branch, Senn was named Director of the Institute and the herbarium became the responsibility of the Phanerogamic Taxonomy Section of that Institute. Dr. C. Frankton was appointed Head of the Section and Mr. W.J. Cody was appointed Curator of the Vascular Herbarium. At this time there was a professional staff of 12 taxonomists. Dr. Senn was succeeded as Director of the Institute by Dr. R.A. Ludwig and subsequently by Dr. A. Chan.

The development of the Mycological Herbarium was a much later story. In his report for 1920, Gussow noted that he had hired a temporary assistant, Mr. W.S. Odell, to collect and study the fleshy fungi of the Ottawa district. The stated aim of the project was to establish a fungus herbarium, so obviously very little of a mycological collection existed at that time.

Mr. I.L. Conners came to Ottawa in 1929 to head the Canadian Plant Disease Survey and to serve as curator of the mycological herbarium. The collection when Conners came consisted of about 1,000 miscellaneous specimens and about 1,000 specimens in sets of exsiccati which had been donated, or purchased by Gussow. All these specimens had been amalgamated into a single collection that was arranged alphabetically. Mr Conners organized the collection systematically, reassembled the sets of exsiccati and by 1934 had housed the whole collection in steel herbarium cabinets. By 1946 the holdings in the National Mycological Herbarium had increased to 55,186 accessions.

The National Mycological Herbarium became the responsibility of the Mycology Unit within the Division of Botany and Plant Pathology in 1951. Dr. J.W. Groves became the first head of the Mycology Unit and initially had a professional staff of eight. Dr. D.B.O. Savile who had assisted Mr. Conners in the herbarium for a number of years following World War II was named Curator of the Herbarium in 1954 and held this position until 1967 when Dr. J.A. Parmelee was appointed Curator.

In 1969, with the establishment of the Research Branch the Mycology Unit of the Division of Botany and Plant Pathology became the Mycology Section of the newly formed Plant Research Institute. Dr. Groves, who served as Head of the Section, had a professional staff of 15 in 1969. The National Mycological Herbarium as of this date contained 169,863 accessions. Dr. R.A. Shoemaker was appointed Head of the Mycology Section in 1967 succeeding Dr. Groves.

BRI established

In August of 1973, the former Entomology Research Institute and the Mycology and Vascular Plant Sections of the former Plant Research Institute were amalgamated to form the Biosystematics Research Institute. The Institute at present has a total staff of 137, of which 58 are scientists and 60, technicians. The remaining staff consists of typists and administrative support personnel, who together constitute an Administrative Section under the direction of the Institute's administrative officer. The scientific and technical staff are organized into ten sections, each with a section head. The sections, as presently constituted, are as follows:

Aquatic Biology, Hemiptera and Nematology Section
Diptera Section
Hymenoptera Section
Lepidoptera-Trichoptera Section
Coleoptera, Siphonaptera and Arachnida Section
Experimental Taxonomy Section
Cultivated Crop Section
Noxious and Native Plant Section
Plant Disease Fungi Section
Biodegrading Fungi Section

Professionally the staff consists of:

- 6 experimental taxonomists
- 27 insect taxonomists
- 3 arachnid taxonomists
- 2 nematode taxonomists
- 10 vascular plant taxonomists and
- 10 mycologists

Among the insect taxonomists, there are two scientists employed by the Department of the Environment but who are seconded to our Institute; one of these is a Hymenopterist, and the other a Lepidopterist.

The six experimental taxonomists who constitute the Experimental Taxonomy Section are charged with the task of examining physiologically, developmentally and genetically the similarities and differences between closely related species. They are using a multiplicity of techniques in their studies including serology, haematology, cytology, ultramorphology, histology and histochemistry. They are thus examining, in their research on the attributes of a species, the very building blocks of taxonomy. There is undoubtedly one of the most exciting areas of research within the Institute at the present time.

The Biosystematics Research Institute has a national responsibility in the Insecta, the Arachnida, the Nematoda and the Fungi. That is, our Institute is responsible for maintaining the national collections of these organisms and providing a national Identification Service.

The same is not true for our vascular plant group. The National Museum of Canada also maintains a group of vascular plant taxonomists who have in their custody the National Herbarium of Canada. However, the holdings in the CDA herbarium, contained within the Institute, are larger than those in the Herbarium at the National Museum.

Because of the overlapping jurisdiction between the National Museum botanists and those in the Department of Agriculture, the vascular plant scientists within our Institute are becoming more and more oriented to plants of immediate economic importance to man, that is the cultivated crops and the weeds.

In our other areas of competence, however, we have the clear responsibility of elucidating the Canadian flora and fauna. Our objective must be the prosecution of taxonomic research, and the publication of revisions, on groups of temperate North American distribution. This basic work must be followed by the production

of hand books devoted to the Canadian flora and fauna and designed to facilitate the identification of organisms by the non-taxonomic biologists and the technologist. Perhaps this should also be our objective in the vascular plants.

In future years, much of the taxonomic revisionary work and the production of handbooks will probably be done on a contract basis under the government's "Make or Buy" policy. Indeed in future years, as a result of spiralling publication costs and other factors, our objective may become the data banking of taxonomic information, keys, and life history and distributional data, rather than the production of handbooks to the Canadian flora and fauna.

The identification service which our Institute renders for the Department of Agriculture and Department of the Environment and for other organizations is of the greatest importance. The co-operative research which our Institute enters into with other Research Branch establishments is also of the greatest importance. Our paramount role, however, must be to clarify taxonomically the Canadian flora and fauna.

This is not a pedantic pursuit. Man must learn to live in his environment without grossly abusing it as he has done in the last several decades. To live in harmony with our environment, we must come to understand it, and to understand it we must embark on a total ecological assessment of all the biotic regions that we have in this vast country. Such a program of environmental appraisal can only be carried forward if we have an adequate reservoir of both taxonomic knowledge and of taxonomic expertise.

D.F. Hardwick

BITING FLY CENTRE

The Canada Committee on Biting Flies has recommended to the Canadian Agricultural Services Co-ordinating Committee that a Centre for Studies on Biting Flies be established in Canada. The Committee further recommended that the centre be located in Winnipeg, Manitoba, following a mailed ballot of the membership to determine the best location for the Centre considering all aspects.

At the recent CCBF meeting in Ottawa, April 8 and 9, it was learned that CASSC has approved the recommendation in principle. The recommendation also has the full support of Dr. B.B. Migicovsky, Assistant-Deputy Minister (research) Canada.

INTERNATIONAL COMMISSION ON ZOOLOGICAL
NOMENCLATURE ANNOUNCEMENT

A.N.(S) 98

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.* 32 part 4, 30th January, 1976).

- 260. *Dermacentor andersoni* Stiles, 1908 (Acarina: IXODIDAE): proposed conservation.
- 1772 *Ophiura* Lamark, 1801 and *Ophioderma* Müller & Troschel, 1840: revised proposals for stabilisation.
- 2907. *Ophiolepis* Miller & Troschel, 1840: proposed designation of type-species.
- 2112. CIRCINAE in Aves and Mollusca: proposals to end the homonymy.
- 2113. *Pterois zebra* Quoy & Gaimard, 1825 (Pisces: SCORPAENIDAE): proposed suppression.
- 2116. *Halecium* Oken, 1815 (Coelenterata: Hydroida): Proposed validation: *Thoa* Lamouroux, 1816, proposed suppression.
- 2119. *Lecanium acuminatum* Signoret, 1873 (Hemiptera: COCCIDAE) proposed designation of neotype.
- 2120. *Cystioceras* Börner, 1912 (Insecta: Collembola): proposed suppression.

Comments should be sent in duplicate, citing case number, to the Secretary, International Commission on Zoological Nomenclature, c/o British Museum (Natural History), Cromwell Road, London, S.W.7 5BD, England, if possible within 6 months of the date of publication of this notice. Those received early enough will be published in the Bulletin of Zoological Nomenclature.

R.V. Melville
Secretary to the International Commission
on Zoological Nomenclature

Corn Rootworms: Laboratory Rearing and Manipulation, an 18-page booklet by USDA's Agricultural Research Service. For a copy write T.F. Branson, Northern Grain Insects Research Laboratory, ARS—USDA, Brookings, S. Dak. 57006

THE NEED FOR VOUCHER SPECIMENS IN BEHAVIORAL AND ECOLOGICAL STUDIES

An endemic but commonly unrecognized problem in behavioral and ecological studies of insects is the unreliability of taxonomic identifications. The great majority of insect families and genera await revision, and few can be said to be under the surveillance of experts with knowledge of more than a small fraction of the world fauna. Even when the soundest possible identifications are made, they may later come under question as new diagnostic traits are discovered that dissolve old species into complexes of sibling species. This circumstance is a more basic source of error than the mere failure to keep up with name changes caused by nomenclatural priority. Because of the huge size of the insect fauna, the problem is much worse than in vertebrate zoology, and for this reason has not come to the attention of many ecologists and others whose training was mostly with vertebrates. It has been a frequent experience that many of the published data in entomological studies are in final analysis reduced in value or rendered unusable because of the eroding taxonomic base on which they were made. Several egregious examples recently encountered have in fact prompted this note. The case of the Family Formicidae (Hymenoptera) is particularly probative.

The solution to the problem lies in more faithful — one might say invariant — use of voucher specimens. It is recommended that in publishing new data on insects authors routinely:

1. Name the person who identified the specimens;
2. Indicate the public collection in which voucher specimens have been deposited; and
3. Provide the accession number or at least the full collection data for each of the series.

This is not a matter for legislation or mandate, but it is hoped that in the future more authors will follow the procedure, and journal editors will insist on their doing so.

Revisers will then be able to use more extensively the huge amount of biological data available in the literature.

ACKNOWLEDGEMENT. For critically reviewing the manuscript, I am grateful to Dr. E.O. WILSON, Museum of Comparative Zoology, Harvard University.

André Francoeur
Université du Québec
Chicoutimi G7H 2B1

White grubs wanted . . .

. . . for studies on the distribution and biology of *Phyllophaga anzia*. Address all pertinent information to: Karen Toohey, Department of Entomology, MacDonald College, Qué. H0A 1C0. Phone collect: (514) 457-6580, ext 312.

CANACOLL FOUNDATION

Formed in 1972, the CanaColl Foundation is a registered, non-profit, independent organization dedicated to promoting research on the Canadian National Collection of insects and related arthropods (CNC). The CanaColl Endowment Fund was established with the accrued interest to be available for grants. Initially these grants are covering only out-of-pocket expenses for outside specialists to curate selected parts of the CNC.

Our goal is an endowment fund of \$10,000 by the end of 1977; at present the fund contains \$6,894. Of this amount, 48% came from 14 members or former members of the Biosystematics Research Institute, Agriculture Canada (the organization responsible for the CNC), 21% from 6 corporations, 18% from 22 Canadians (excluding BRI members), and 13% from 16 friends in the United States. Several individuals have donated more than once. Donors giving \$100 or more are honored as Patrons; to date 22 individuals and 5 corporations are Patrons of CanaColl. There is also the class of Distinguished Patron for anyone donating \$2,000 or more.

CanaColl's first grant (\$131) was given to Mr. Wayne Mathis, Corvallis, Oregon, near the end of 1974 to curate the ephydriids (Diptera). No requests for grants were received during 1975, consequently the accrued interest now amounts to over \$900. This will increase to about \$1,400 by the end of 1976, which will be enough to provide several grants. Specialists interested in curating parts of the CNC are invited to enquire in writing for more information.

CanaColl can use your support in one or two ways: (1) By making a donation (large or small), bequeath, memorial, etc., all of which are *tax deductible* or (2) By becoming a member (initial fee is \$11 and \$1 annually thereafter). Members meet at least once a year to conduct any business and to elect officers. To date there are 47 members, of whom 8 are from the United States and 1 from overseas. Donors and members receive annual reports on the progress of CanaColl.

For more information, write to: CanaColl Foundation, 4058 K.W. Neatby Bldg., 1010 Carling Avenue, Ottawa, Ontario, K1A 0C6.

EMPLOYMENT: POSITION AVAILABLE

Position: Assistant or Associate Professor (depending on experience and qualifications).

Qualifications: Ph.D. and experience in Economic Entomology or Pest Management.

Responsibilities: Teaching and Research in Economic Entomology, Agricultural Zoology and other areas of Biology.

Salary: Commensurate with qualifications and experience.

Apply to: Dr. R.K. Stewart, Chairman, Dept. of Entomology, Macdonald Campus of McGill University, Ste. Anne de Bellevue, P.Q. H0A 1C0.

BOOK REVIEW

Advances in Insect Physiology. 1975. Edited by J.E. Treherne, M.J. Berridge, and V.B. Wigglesworth. Vol. II, Academic Press, New York, London, San Francisco, 432pp. \$31.00.

Volume II of this excellent series contains four well written and timely articles which are of interest to specialists in a number of fields. Listed below are the contents of each article.

Regulatory Mechanisms in Insect Feeding. L. Barton Browne. pp.1-116.

1. Introduction
2. Regulatory changes in components of feeding behaviour
 - 2.1 General comments on the design and interpretation of experiments
 - 2.2 Regulation of locomotor pre-ingestion behaviour
 - 2.3 Regulation of nonlocomotor pre-ingestion behaviour
 - 2.4 Regulation of ingestion.
3. Long-term regulation of intake
 - 3.1 Constancy of intake
 - 3.2 Effect of deprivation on subsequent *ad lib* feeding
 - 3.3 Effect of dilution of the food on intake
 - 3.4 Temporal patterning of ingestion
4. Some factors other than feeding and deprivation which affect feeding behaviour
5. Concluding remarks

The Cytophysiology of Insect Blood. A. Clive Crossley. pp.117-221.

1. Introduction
2. The fine structure of insect blood cells
3. Insect blood cell diversity
4. Humoral control of insect blood cell populations
5. Insect blood cell locomotion and social behaviour
6. Insect blood clotting
7. Insect blood cells in defence reactions
8. Endocytosis by insect blood cells
9. Phenol metabolism in insect blood cells
10. Insect blood cells in connective tissue formation
11. Insect blood cells in synthesis, secretion and plasma homeostasis

Development and Physiology of the Oocyte — Nurse Cell Syncytium William

H. Telfer. pp.223-319

1. Introduction
2. Morphological background
3. Germarial function in polytrophic ovarioles
4. Homologies with other insect ovaries
5. Differentiation of nurse cells and oocyte
6. Synthetic functions of nurse cell and oocyte nuclei
7. Intercellular transport mechanism
8. Summary and prospect

Major Patterns of Gene Activity During Development of Holometabolous Insects. John A. Thomson. pp.321-398.

1. Introduction
2. Size and organization of the genome
3. Patterns of gene activity in replication and transcription
4. Translation of larval gene set
5. Translation of the imaginal gene set
6. Endocrine influences on fat body structure and function
7. Conclusion

Susan McIver

FORTHCOMING MEETINGS

A joint meeting of the Society of Invertebrate Pathology and the International Colloquium on Invertebrate Pathology will be held August 20-September 3, 1976, at Queen's University, Kingston, Ontario. The programme will consist of symposia, workshop, and submitted papers. Symposia topics include: Viruses of Invertebrates; The Application of Tissue Culture Techniques to Invertebrate Pathology; Epizootiology of Invertebrate Diseases; Defense Mechanisms in Invertebrates; Biological Control. Registration information from: Dr. Peter Faulkner, Department of Microbiology and Immunology, Queen's University, Kingston, Ontario K7L 3N6.



The Southern Forest Insect Work Conference will hold its 21st annual meeting in Atlanta, Georgia, from August 15-17, 1976. This year's conference will have sessions on pine seed pests, economics of forest pest management, administrative management of research projects, statistical analysis of forest insect data, and other topics. Interested persons should contact Dr. Jack E. Coster, Conference Chairman, P.O. Box 6109, School of Forestry, Stephen F. Austin State University, Nacogdoches, TX, 75961.



XV International Congress of Entomology, August 19-27, 1976 Washington D.C. (P.O. Box 151, College Park, Maryland 20740, U.S.A.).

Société Entomologique du Québec. 103e congrès annuel, 21-22 octobre 1976. Institut de Technologie Agricole, La Pocatière.

Entomological Society of America. Nov. 28-Dec. 2, 1976. Sheraton Waikiki Hotel, Honolulu, Hawaii.

DISTINGUISHED VISITOR

Professor *Thomas Odhiambo*, Director of the International Centre of Insect Physiology and Ecology (ICIPE) in Nairobi, Kenya, paid his first visit to Canada in April 1976. Dr. Odhiambo had been invited to participate in the 8th International Conference of the Institute for International Cooperation, and gave a paper entitled "Access to technology and innovation: the building up of a scientific capacity." He emphasized the need for basic research in developing countries: "It is becoming increasingly clear that the developing countries themselves must, as a matter of survival, get involved in the process of fundamental research itself for those areas of agricultural science and technology — and indeed, any other areas of science and technology — which are of vital importance to them. It is only in this manner that they will be able to assure themselves that they will, in time, have the corpus of knowledge necessary for making a particular technological breakthrough."

The Director of ICIPE also gave a seminar at the Biosystematics Research Institute on the organization and achievements of his institute. He met with officials of the Research Branch of Agriculture Canada and of the International Development Research Centre. Dr. Odhiambo expressed the hope that more Canadian scientists would become involved in the problems of developing countries.

PERSONALIA

Dr. Lionel Daviault, ancien directeur du Centre de Recherches Forestières des Laurentides à Sainte-Foy, Québec, a été fait membre émérite de l'Association Canadienne-Française pour l'Avancement des Sciences (ACFAS) au cours du 44e congrès de cette association à l'Université de Sherbrooke, le 13 mai 1976.

Roy Ellis, City of Winnipeg Entomologist, has been appointed Regional Director for Canada of the American Mosquito Control Association. In his third year as City Entomologist, he is Manager of Winnipeg's Mosquito Abatement District. Last year, Dr. Ellis was appointed Director of Emergency Mosquito Control Operations by the Province of Manitoba during the outbreak of Western Encephalitis.

Marcel Hudon, Research scientist at the St-Jean Research Station attended the 8th International Plant Protection Congress in Moscow, USSR in August, 1975 presented a paper on "maize plant stress from European corn borer attack". After the Congress, Marcel attended the 7th annual work planning symposium of the International Working Group on the European corn borer in Leningrad, USSR. Nine of the 15 cooperating countries to the *Ostrinia* project were represented. Following the symposium, Marcel visited maize breeding centers interested in short season maize resistant to the corn borer in Krasnodar and Soukhouni, southern USSR. Before returning home, he met European entomologists and maize breeders at the 8th International Congress of EUCARPIA (maize) in Versailles, France, in view of obtaining exotic maize germplasm for his research on the corn borer.

Dr. Sam Loschiavo, Research Scientist at Agriculture Canada Research Station, Winnipeg has accepted a one year leave to begin in July, 1976 as a visiting colleague in the Department of Entomology, University of Hawaii, Manoa, Honolulu. While at Honolulu, Dr. Loschiavo will pursue a program of determining the susceptibility of newly developed food products to storage pests, conducting general surveys of stored product insects in tropical food storage, which we understand has not been done before and establishing economic damage threshold levels for storage pests in the tropics.

Dr. Louis-C. O'Neil, doyen de la Faculté des Sciences de l'Université de Sherbrooke et archiviste de la Société Entomologique du Canada était président du 44e Congrès de l'ACFAS. Le **Dr. Jacques Juillet**, directeur du Département de Biologie de la même université était co-responsable du programme scientifique à ce congrès qui a réuni près de 1500 personnes.

Dr. Paul Riegert, Professor and Head, Department of Biology, University of Regina, Saskatchewan recently spent some time in Ottawa and Winnipeg while on sabbatical leave interviewing retired entomologists and going through the archives while compiling a history of entomology in Western Canada. Dr. Riegert is writing a book on the subject which is expected to be published at some future date.

Dr. W.G. Wellington, Director, Institute of Animal Resource Ecology, University of British Columbia, has been appointed moderator of the symposium on Population Quality which has been organized within the ecology section of the XV International Congress of Entomology, August 19-27, 1976, Washington D.C.

Dr. R.H. Wright, Vancouver B.C., has been selected as the holder of the **R.S. Jane Memorial Lecture Award** for 1976. This award was established by the Chemical Institute of Canada in 1960, to commemorate the memory of the late Robert Stephen Jane. Dr. Wright's projected talk will be the chemical engineering problems involved in dispersing scents and other behavior — modifying signals for practical pest control.

Also, at the invitation of the Centre National de la Recherche Scientifique in Paris, Dr. Wright will be taking part in the Colloquium on "Le Comportement des Insectes et les Signaux Issus du Milieu Trophique" which is being organized by Professor Labeyrie of the Université François Rabelais in Tours, next September.

Dr. G.G.E. Scudder is the new Head of the Department of Zoology, University of British Columbia.

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DEADLINE

The deadline for the next issue, Vol. 8, No. 3 for September 1976 is 15 August. The approximate date of mailing will be 15 September.

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