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ENTOMOLOGICAL SOCIETY OF CANADA

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# Bulletin

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SOCIÉTÉ ENTOMOLOGIQUE DU CANADA

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Vol. 10

March — Mars

No. 1



ACTION REQUESTED — PRENDRE NOTE  
Pp. 6, 17, 22, 25, 26, 27

THIS ISSUE — TABLE DES MATIÈRES

The Canadian Entomologist: A review — McLeod & Wellington	2-5
Canadian Biting Fly Association	5
Notice of Meeting	6
Report of Nominating Committee	6
Post-Graduate Award — Bourse de la Société	6-9
ESC Scholarship 1978	10
Criddle of Aweme — A. Criddle	11-16
By-Laws — Statuts	17
International Code of Zoological Nomenclature	17
Pilot study for a biological survey	18-20
Report on Panel discussion on biological survey	20-22
Forthcoming Meetings	22
Recent Death	22
The bugged page	23
Book Reviews	24-25
Satellite program in statistical ecology	25
Photo Salon	26
Annual Meeting — Second notice	27-28

*Supplement:* Collection of Canadian Insects And Certain Related Groups

Insert, 24 pages.

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B.J.R. Philogène

Bulletin Editor

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EDITORIAL

With this first issue of 1978 the *Bulletin* takes a new look. Rising costs have forced us to change the cover and reduce the type size. Future issues will also carry advertisements of interest to entomologists. With such modifications we hope to reduce costs without affecting the quality of this most important ESC publication now entering its 10th year. Comments from the membership on changes to the *Bulletin* will be welcome.

There are two items in this issue that should be of particular interest to readers. The first is the enclosed flyer (see also page 10) where the chairman of the Scholarships Committee calls on members to help achieve the objective for the establishment of a healthy scholarship fund. We cannot be indifferent.

The second item (page 23) comes from the Education Committee. Surely more than 11 Canadian entomologists must have something to contribute at the public education level. Be generous of your time and your resources. The future of Entomology in Canada depends not only on enlightened decisions by the Executive or the Board, but also — and perhaps more — on the constant interest and participation of individual members in the Society's endeavours.

by

**J.M. McLeod and W.G. Wellington**

*Environment Canada Laurentian Forest Research Centre  
Ste. Foy, P.Q. and the Institute of Animal Resource  
Ecology, University of British Columbia, Vancouver*

Rising costs and dwindling subsidies are creating more and more difficulties for every type of scientific journal, especially those sponsored by scientific societies. In order to provide the best service to members at the least cost, society officers responsible for publication policies need increasing amounts of information concerning reader interests, the agencies that sponsor authors, the subdisciplines that most support the journal, and a variety of "housekeeping" data.

Recently, we examined every article published in the *Canadian Entomologist* between January 1967, and July 1977, to discover and record: the numbers of pages, tables, graphs, and illustrations; the number of authors; the agency sponsoring the senior author; subject-matter disciplines; and the dates on which the article was received by the journal and on which it was published.<sup>1</sup> We reviewed 1,934 articles. Some of the basic statistics of the journal for the period are shown in Table 1, and the articles are further classified by sponsoring agency (Table 2) and sub-discipline (Table 3).

**TABLE I**

**Basic statistics for articles published in the Canadian Entomologist 1967-1977**

Statistics per article	Mean and Standard Deviation
Authors	1.6 ± .81
Pages	8.1 ± 6.8
Tables	1.5 ± 2.1
Graphs	1.0 ± 2.0
Illustrations:	
for taxonomic papers	15.8 ± 22.2
for other papers	2.2 ± 5.7
Days from receipt of article to publication in journal	228 ± 112

**TABLE II**

**Sponsors for articles in the Canadian Entomologist, 1967-1977**

Sponsor	Proportion of total articles
Canadian government:	
Agriculture	.39
Forestry	.17
Other	.02
Canadian university	.15
American university	.15
American government	.08
Other sponsors	.04
<b>Total</b>	<b>1.00</b>

<sup>1</sup>This information is available in machine-readable form at the Institute of Animal Resource Ecology, University of British Columbia.

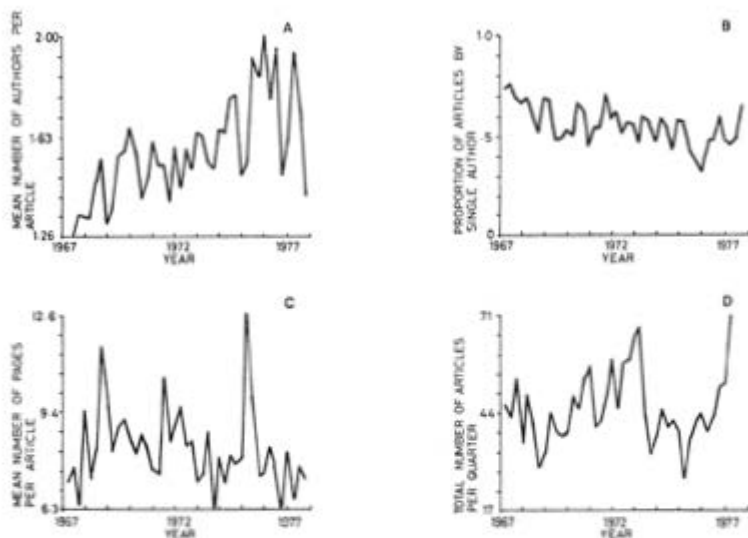
**TABLE III**  
**Disciplines represented in the Canadian Entomologist, 1967-1977**

Discipline	Proportion of total articles
Ecology (including mathematical biology)*	.31
Taxonomy	.26
Applied control	.11
Anatomy and physiology	.10
Life history	.08
Techniques	.06
Others	.08
<b>Total</b>	<b>1.00</b>

\*Articles in which the subject matter was environmental were assigned to this category unless they could clearly be classified as "life history".

The journal is mainly a vehicle for papers on ecology and taxonomy (56%). The contributors are mostly Canadian (73%) and, of these, most are government scientists (58%). The proportional contributions by Canadian and American university scientists are approximately equal (roughly 15% each). A relatively high proportion of the articles (17%) deal with specific entomological techniques and control applications. Taxonomic articles, which comprise over one quarter of the contributions, contain more than seven times the number of illustrations included in articles from other disciplines.

Some of the trends over the past 11 years are shown for each quarter-year in the graphs of Figs. 1-2. The mean number of authors per article (Fig. 1A) and the proportion of articles by single authors (Fig. 1B) reflect the trend towards multi-disciplinary team research initiated during the 1960's. The mean of 1.25 authors per article found at the beginning of the period increased to approximately 1.75 by the mid-70's. During the last four years, however, the trend towards increasing numbers of authors per article appears to have slowed and perhaps even halted.



*Figure 1*

*Some trends for articles in the Canadian Entomologist, 1967-1977. A. Mean number of authors per article. B. Proportion of single-authorship articles. C. Mean number of pages per article. D. Mean number of articles per quarter.*

Surprisingly, the length of individual articles has not changed much through the decade (Fig. 1C), though there was a decrease from 9 to 7 pages per article between the late '60's and the present. Apparently pleas for brevity by the sponsoring agencies that pay the publication costs have not yet had much effect. Furthermore, the numbers of photographs, graphs, and tables per article, though variable, showed no consistent trend throughout the decade. Finally, as might be expected from the foregoing results, there was no consistent trend in the number of articles per issue during this period.

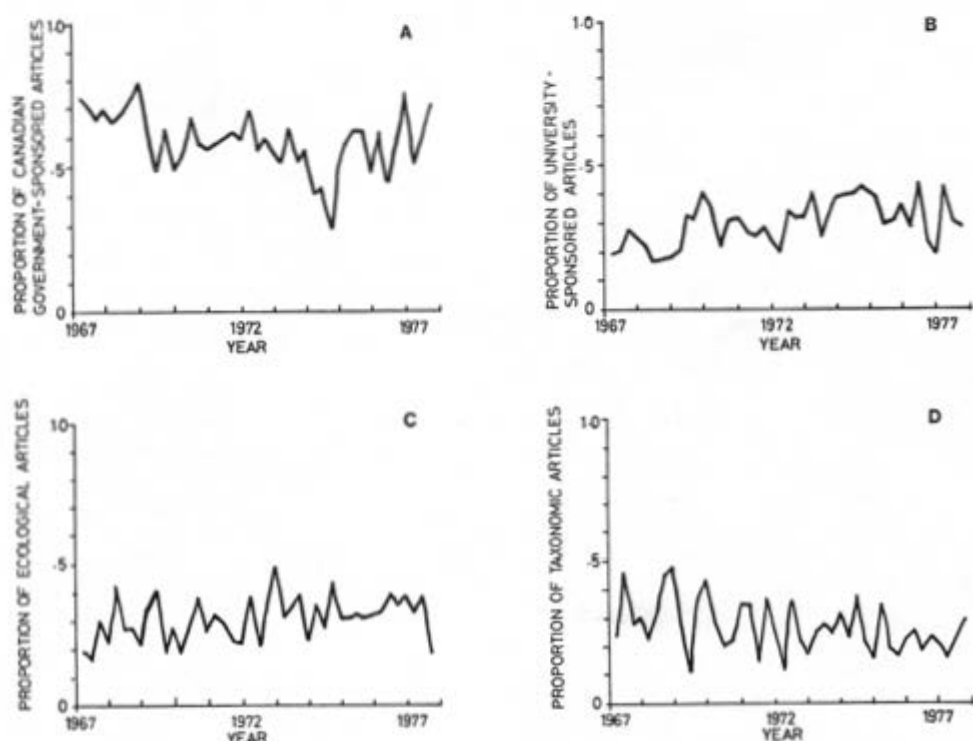


Figure 2

*Trends in sponsorship and subject matter for articles in the Canadian Entomologist, 1967-1977. A. Canadian government publications. B. University (Canadian and American) publications. C. Ecological articles. D. Taxonomic articles.*

The proportion of articles contributed by Canadian government scientists decreased from 75 to 35% from 1967 to 1974, but has returned to 60% since that mid-70's low point (Fig. 2A). Contributions by university scientists have risen from 20% in 1967 to their present level near 30% (Fig. 2B). At the beginning of the period, taxonomic and ecological contributions were nearly equal (Fig. 2C, D) but, for the last four years, there have been about 10% more ecological than taxonomic papers.

Average turn-around time for a submitted article has been the 228 days, or 7-1/2 months, shown in Table 1. But there have been some surprisingly violent changes in turn-around time (Fig. 3). At the beginning of the period, the turn-around time was about 150 days (5 months). This interval increased rapidly to nearly 10 months by the middle of 1970. By 1973, turn-around time had been driven down again to pre-1968 levels, but since 1974 it has been increasing rapidly again. Now it is more than one year.



Figure 3

*The Canadian Entomologist: trends in turn-around time (days from date received to date issued).*

There was no apparent relationship between turn-around time and sponsoring agency, subject matter, length or number of articles per issue, or any other variable we measured. Presumably the changes in trend therefore reflect changing editorial and printing procedures.

#### Acknowledgments

We thank Steven Borden for helping with the programming. Diana Rollo and Gordon McPhail compiled the data.



#### CANADIAN BITING FLY ASSOCIATION

In recognition of the growing interest and number of specialists involved in the biology and control of biting flies in Canada, an association is being formed, patterned after the American Mosquito Control Association. Interested persons may contact Dr. R.A. Ellis (City of Winnipeg Entomologist, 2799 Roblin Boulevard, Winnipeg, Manitoba R3R 0B8), Chairman of the C.B.F.A. Formation Committee, for details.

## NOTICE OF MEETING

The 1978 Annual Business Meeting of the Entomological Society of Canada will be held on Tuesday afternoon, 22 August, at Ottawa, Ontario. 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.



### REPORT OF THE NOMINATING COMMITTEE FOR THE 1978 BALLOT

First Vice-President:	J.J. Cartier, Ottawa/Quebec J.G. Pilon, Montreal
Second Vice-President:	G.T. Harvey, Sault Ste. Marie S.R. Loschiavo, Winnipeg
Directors-at-Large:	P. Benoit, Ste-Foy R.H. Burrage, Saskatoon J.D. Shorthouse, Sudbury
Fellowship Committee:	F.T. Bird, Sault Ste. Marie G.S. Cooper, Mississauga C.A. Miller, Fredericton

T.A. Angus, L. Jobin, M.E. MacGillivray (Chairman)

Additional nominations from the membership must be submitted not later than March 31, 1978 (see *Bulletin 2(4): 138*).



### ANNOUNCEMENT ENTOMOLOGICAL SOCIETY OF CANADA POSTGRADUATE AWARD — 1978

The Entomological Society of Canada will offer a postgraduate award to assist a student in undertaking his or her first year of graduate study and research leading to an advanced degree in entomology. The award will be made to a man or woman on equal terms on the basis of high scholastic achievement.

The purpose of this announcement is to outline the eligibility requirements, the method of application and the regulations governing the use of the award.

All communications regarding the award should be addressed to:

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



## POSTGRADUATE AWARD

A Postgraduate Award valued at \$500.00 for 12 months will be awarded for a first year of postgraduate study and research in entomology in Canada.

### Eligibility

The successful candidate must be either a Canadian citizen, or a landed immigrant with a baccalaureate from a Canadian university. The award is conditional until the recipient has provided evidence that he, or she, has been accepted by a graduate school to engage, during the 1978-79 academic year, in a program of study and research for an advanced degree with full graduate student status. Failure to provide this evidence will result in cancellation of the award. Before the scholar may receive his or her award a statement must be provided by the Dean of Graduate Studies at the university of tenure certifying that the student has been accepted for graduate studies and research with the full status of a graduate student. A scholar who enters a graduate school as a qualifying candidate is not eligible to hold the Postgraduate Award of the E.S.C. The award to a student who was unable to gain admission to a graduate school as a fully qualified student will be cancelled.

### Tenure

The Entomological Society of Canada Postgraduate Award is granted for tenure in Canada. A successful candidate may carry out his or her postgraduate research at the Canadian university of his or her choice. Tenure may commence on or after May 1978 but not later than the date on which the academic year begins.

### Method of Application

The Entomological Society of Canada Postgraduate Award will be announced before 1 September 1978. Candidates should submit a properly completed form, with supporting documents, in accordance with the instructions printed on the application form. Applications must be received by the Secretary of the Society not later than 15 June 1978.

## REGULATIONS

### Demonstrating and Instructing

The Award holder is permitted under normal circumstances to demonstrate or instruct for a maximum of 200 hours per annum, provided that the Head of his or her department considers it desirable and that it does not hinder the progress of his or her work. The Award holder may accept remuneration for such work at the rate in effect at the university concerned.

### Emolument from Other Sources

Apart from demonstrating and holidays, an award holder will devote his or her whole time to study and research and will not undertake any paid work, but he or she may hold another award or scholarship.

### Transfers

After the postgraduate award is made, any change in the course of study or in the university of tenure requires prior approval of the Entomological Society of Canada Scholarship Committee. A request for permission to transfer must be supported by statements from each Head of department concerned.

The Award is made on condition that the winner engage in a program of graduate studies and research for an advanced degree in Entomology. Students who, after receiving the Award decide to transfer to a graduate program other than entomological cease to be eligible and their award will be cancelled.

### **Absence Through Illness**

If, on account of illness, an Award holder is absent continuously for more than two weeks, the Scholarship Committee of the Society should be notified.

### **Payment of the Award**

The Award will be paid in January 1979 on receipt of a report of satisfactory progress from the supervisor.

### **Additional Allowances**

The Award stipend is all-inclusive. There is no provision for additional grants by the Society for any purpose. Additional grants, for example, to attend meetings, pay course fees, meet publication costs, etc., will not under any circumstances, be authorized.

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## **AVIS**

### **Bourse de la Société Entomologique du Canada aux étudiants post gradués — 1978**

La Société Entomologique du Canada offrira une bourse aux étudiants en première année d'études post-graduées en préparation d'un diplôme supérieur en entomologie. La bourse sera accordée à un étudiant ou une étudiante en raison des seuls critères de réussite académique.

Le but de la présente est de préciser les conditions d'éligibilité, le processus de demande et les exigences rattachées à cette bourse.

Toute correspondance relative à la bourse doit être adressée à:

Dr. G.H. Gerber, Secrétaire  
Société Entomologique du Canada  
aux soins de: Station de Recherches  
Agriculture Canada  
195 Dafoe Road  
Winnipeg, Manitoba R3T 2M9

### **Bourse d'études post-graduées**

Une bourse d'études post-graduées d'un montant de \$500.00 sera accordée pour 12 mois à un étudiant en première année de travaux de recherches entomologiques au Canada.

### **Eligibilité**

Le candidat choisi doit être un citoyen canadien ou un résident reconnu du Canada avec un baccalauréat d'une université canadienne. La bourse ne sera accordée que lorsque le candidat aura soumis un dossier démontrant qu'il est enregistré aux études supérieures pour l'année académique 1978-79, et que son programme établi en vue d'un diplôme supérieur donne tous les privilèges rattachés au statut d'étudiant post-gradué. A défaut de ce dossier, la bourse sera annulée. Avant de recevoir sa bourse, le Doyen de l'Ecole des Etudes Supérieures aura soumis par écrit un témoignage d'authenticité du programme d'études et de statut de l'étudiant. Un étudiant qui s'inscrit en vue de compléter l'obtention de crédits ne peut pas faire une demande pour la bourse de la S.E.C. Si la bourse était accordée à un candidat qui n'aura pu obtenir son admission à une Ecole de Gradués, celle-ci sera annulée.

### **Endroit**

La bourse ne peut être obtenue qu'au Canada. Le candidat pourra s'inscrire à l'université de son choix. La bourse prendra effet en Mai 1978 ou plus tard sans excéder la date du début de l'année académique.

### **Formalités de la demande**

La bourse sera annoncée avant le 1<sup>er</sup> septembre, 1978. Les candidats devront soumettre leur candidature à l'aide du formulaire approprié et y ajouter tous les documents requis sur la formule de demande. Les demandes devront être reçues par le Secrétaire de la Société au plus tard le 15 juin, 1978.

## **RÈGLEMENTS**

### **Démonstration et cours**

Le boursier pourra dans des circonstances normales donner des séances de cours ou de démonstration jusqu'à un maximum de 200 heures par année pourvu que le chef de son département en exprime le désir et considère que ces tâches additionnelles n'iront pas à l'encontre du progrès de l'étudiant. Le boursier peut accepter une rémunération au taux normal à l'université où il se trouve.

### **Autres sources de revenus**

Sauf pour fins de démonstration et les jours de congé, le boursier devra consacrer tout son temps à l'étude et à ses recherches et n'accepter aucune autre rémunération, mais pourra jouir d'une autre bourse or d'un prix.

### **Transferts**

Après acceptation de la bourse, tout changement dans le programme d'études ou déplacement vers une autre université devra recevoir au préalable l'approbation du Comité de la Bourse de la S.E.C. Une telle demande doit être accompagnée de documents provenant des deux Chefs de départements concernés.

La Bourse est accordée pour poursuivre des études du 2<sup>e</sup> ou 3<sup>e</sup> cycle conduisant à l'obtention d'un grade en entomologie. Les récipiendaires de la Bourse qui décideront de changer d'orientation pour d'autres disciplines que l'entomologie deviendront inéligibles et se verront retirer leur bourse.

### **Absence pour maladie**

Si, pour des raisons de maladie, un Boursier s'absente pour plus de deux semaines, il doit en informer le Comité de Sélection de la Société.

### **Paiement de la Bourse**

Le paiement de la bourse se fera au cours de Janvier 1979 sur réception d'un rapport satisfaisant du professeur du boursier.

### **Frais supplémentaires**

La Bourse consiste en un montant total. Il n'y a pas d'autres formes de prix accordés par la Société. Des frais supplémentaires pour assister, par exemple, aux réunions scientifiques, ou pour frais de cours, publications, etc., ne sont autorisés pour aucune raison.

## ENTOMOLOGICAL SOCIETY OF CANADA SCHOLARSHIP

Once again a lack of response! A scholarship is made available by the society to deserving graduate students beginning a career in entomology. The award is available to students entering graduate school or in the first year of their graduate program. At present the scholarship is for \$500.00 and it is hoped in the next few years to be extended to ca. \$5,000.00. This past year we had only "2 applicants". We wish to extend our congratulations to the winner but surely the award can be more competitive. There are many who know of deserving students wishing to begin a graduate career in entomology. We urge you to make them aware of the award and would recommend that university faculty attempt to have the award listed in their graduate calendars. For further information please contact:

Mr. Ray F. Morris  
Research Station  
P.O. Box 7098  
St. John's, Newfoundland A1E 3Y3



*Mr. Béla Nagy (left) receives the 1977 E.S.C. Scholarship from Dr. A.D. Tomlin.*

On January 24, 1978, Dr. Al Tomlin, London Research Institute, presented the 1977 E.S.C. Scholarship to Mr. Béla A.L. Nagy, graduate student in Entomology at the University of Western Ontario, London, Ontario.

Mr. Béla Nagy was born in Sopron, Hungary in 1950. He emigrated to France in 1956, then to Canada in 1960, and became a Canadian citizen in 1965. He received an Honours B.Sc. in Zoology, University of Western Ontario, 1976. Mr. Nagy has a strong, enthusiastic interest in entomology that began when he was a child. He has a large well kept personal collection of Canadian insects which he continues to add to by collecting and rearing. Mr. Nagy intends to use the scholarship to purchase a Lane twenty four drawer entomological cabinet which will enable him to expand his collection to over 6,000 specimens.

The objective of Mr. Nagy's graduate studies and research under Professor John A. George, University of Western Ontario, are: (1) to describe the gross morphology of the antennae of the Oriental fruit moth, in terms of types, numbers and distribution of sensillae; (2) using bioassays to determine which sensillae are olfactory, and (3) to describe the fine structure of the sensillae. His enthusiasm and determination to pursue a study of insects qualifies him well to accomplish the objectives of his research work.

Ray F. Morris  
Chairman  
E.S.C. Scholarships Fund

## CRIDDLE OF AWEME

by Alma Criddle

"Criddle of Aweme" is a phrase that has been frequently used in connection with all aspects of natural history, including Entomology. Two and a half years ago the name was noted so often on specimens in the collection at the University of Manitoba that the man in charge of restoring and completing it became curious, wanting to know more about this particular contributor.

For many of you, "Criddle of Aweme" may be just a name at the end of articles, among the References, or "Literature Cited", but nothing more. For some of you it will be familiar, for others merely evoke the question, "Norman Criddle — who was he anyway?" I would like to introduce Norman Criddle as a personality, not just a name from the past.



The Criddle family emigrated to Manitoba from England in 1882. Norman was then a boy of seven, born at Addlestone, Surrey on May 14, 1875. Two younger brothers and a sister were in the group with their parents, Percy and Alice, who arrived at Brandon the year after the railway had reached that town. After some prospecting for land suitable for their homestead, Percy decided upon the east half of Section 32, Township 8, Range 16W, in the Municipality of South Cypress, 25 miles south-east of Brandon, and about 120 miles west of Winnipeg. Percy emigrated because of financial reverses in Britain. His destination was influenced by posters proclaiming Manitoba as the new Promised Land, and also by such works as Butler's "The Great Lone Land", which gave Percy a rose-coloured impression of his future here. The area Percy had chosen was of sandy soil — hardly the best for successful farming, but he had noted the abundance of trees, which should mean some hunting as well as a supply of wood. Wild fruit and nut trees on the property he hoped would provide food for the larder. Percy's own words in his diary best describe his reasons for the choice. "Opinions vary as to whether light or heavy soil is the thing, I believe in heavy — but again — there seems to be no wood on true Prairie — and the everlasting plain is enough to send one mad. Water there is doubtless plenty of — too much at times, I expect, probably — but wood: none; beauty: none; variety: none. Query: Is it better to have poor land with lots of wood — good shooting and beautiful landmarks making one remotely happy — or rich land half drowned in wet weather, which makes one wish he were dead?" They may have been sound reasons, but they had little to do with choosing a good location for farming.

Unfortunately Percy had no experience in farming, and no aptitude for it either. Without the help of his sons, who were conscripted into working the farm as soon as possible, Percy and his whole family would have fared even worse than they did. Life on the prairie for them began on August 25, 1882, when the family arrived by ox team and two hired wagons to carry all their possessions. They set up housekeeping in two tents, on a small grassy knoll always known as "Tent Patch". This arrangement had to last until the first little log house was ready for habitation in December. The chill of tent life as winter approached was not greatly improved by the move into the house. Chunks of plaster fell out at intervals, winds whistled through chinks between the logs, and the lack of insulation to protect them against the cold of their first Manitoba winter meant a rather Spartan existence. The boys

slept together in one bed, between straw-filled ticks for greater warmth, and always with their clothes on to conserve every bit of warmth. They managed through some very hard years. Their supply of flour at one time consisted of sweepings from the flour of the mill, which could be bought for .50¢ per cwt., once they were swept up. Then Norman's Mother, Alice, had to sift and clean the sweepings carefully to eliminate all foreign matter before the flour could be used. Even then, it tasted of resin from floor and engine belts, rather than of any "minerals and added vitamins". Successful gardening was not just a hobby. It was a necessity to supply vegetables for the table, and to stock the root cellar for winter use. Some of the children developed scurvy due to the inadequate diet. They soon learned what grasses and leaves were edible, and chewed them to gain some of the nutrition their bodies craved. Norman recorded: "Hunger generally accompanied us in our daily work, but boy-like, we forgot its pangs in the interests around us, and as a substitute for bread learned to eat Cree Turnips (*Psoralea esculenta*), a root for which I still retain a liking. Snowshoe rabbits were numerous, and these, with the equally plentiful Sharp-tailed grouse and ducks, did much to prevent starvation, even if they did not always stave off the pangs of hunger". A memory of Harry Vane, Norman's half-brother, was of catching and roasting gophers at noon when the boys were ploughing on one of the fields. There had been nothing in the larder for them to take along as a lunch, when they set out in the morning, so the choice was roasted gophers — or nothing.

The boys were active in sports of all kinds — tennis, football, cricket, hockey, and by 1914 — golf. Norman was the exception. His childhood had been marked by recurrent attacks of bronchitis. He wrote that "poultices to the chest, front and back" were a regular occurrence. He seemed to be less troubled in Manitoba, but the weakness may have prevented too much strenuous activity. He did enjoy work with the oxen, perhaps because their leisurely pace gave him more opportunity to observe what went on around him. He noted that cowbirds swarmed over the oxen and himself while at work, devouring insect pests and thus making themselves welcome companions. One of Norman's regular tasks on the farm was stacking — hay or sheaves. He apparently made an art of the work — his stacks were always of the best shape to shed rain, and guaranteed not to fall apart.

Winter evenings at the Criddle home meant a variety of activities. The girls as they grew up made all their own dresses and even hats, by hand or with the help of a hand-operated sewing machine Norman bought for them in 1913. Here is his sister Maida still using it in 1970. Cards, chess, checkers, billiards (played on a home-made table) were regular recreations. The boys also made cribbage boards, boxes and picture frames of inlaid woodwork, using bits of wood otherwise discarded. The wood inlays were enhanced by the addition of ivory from old piano or organ keys. Also used were Mother-of-pearl insets shaped as roses, leaves, diamonds, hearts — made from the clam shells of the Assiniboine river. Rasps, files, and chisels or knives hand made to fit their needs, were used in creating these artistic results. Norman did not join in this very much (perhaps too busy with his painting) but one of his specimen boxes bears a butterfly of Mother-of-pearl set into the lid.

In 1884 the pioneer settlement acquired a Post Office, and later a School, both known as Aweme. Percy was one of those leading the movement for these additions to the community. He wrote of both in his diary, but wasn't very pleased when the new Post Office was given the name of Aweme, since he had not been consulted about the choice. He gave no explanation or derivation of the name — and apparently the General Post Office can't — there seems to be no record of why it was so called.

The district now had a school, but the Criddle children never attended it. Percy did not approve of the academic standards of the teachers employed there, so his children were taught by their Mother who had been well educated. She was one of the early woman students enrolled at Cambridge University. Norman's education depended on his Mother's teachings, and his own desire to increase his knowledge, partly by using the family library. He also kept a diary for a few years, beginning in 1895, somewhat in imitation of his Father, but more likely at his Mother's suggestion, as a daily exercise in English and composition. In several places, minor corrections of spelling or wording were inserted in Alice's neat handwriting, as though she checked each entry to suggest and encourage improvement. But keeping a diary was not to Norman's liking. He could dismiss the day's labours in a single sentence — "Some ploughing and a few odd jobs done about the place." But if in his work he had seen a new bird, or something of interest in any aspect of natural history, *that* was a different story.



Then he could fill several paragraphs or even pages with a detailed description, and consider it no effort. After 1904 entries were made as field-notes and observations, not as a daily record of his farm activities.

His interest in natural history had begun early. In England he had helped his Mother raise caterpillars. He knew their names, the plants each species preferred for food, and the moths or butterflies which would emerge as the completion of their life cycle, to be released immediately. His interest continued in Manitoba, encouraged by his parents. Soon he was collecting the various species and trying to identify them, as well as birds and wildflowers of the area. By 1898 he was using watercolours to paint the wildflowers. In an effort to know them, he sent his paintings to Ottawa where they caught the attention of Dr. James Fletcher, the genial "weed and bug man", who wrote the correct names on the back of each, and returned them to Norman. In 1900 on a trip to Manitoba to investigate a grasshopper plague, Dr. Fletcher made a point of meeting the young artist, beginning a lifetime association and friendship.



Norman's work with the Department of Agriculture began slowly — as a "hopper expert" in his own district, where he developed the "Criddle mixture" of poison to combat grasshopper plagues; as artist collaborating with Dr. Fletcher in "Farm Weeds"; as seed collector and analyst; and finally as Field Entomologist. A small Laboratory was built for him on the farm in 1915, so he could continue his studies and research during the summers. His winters were spent in Ottawa, tabulating his findings, writing articles and painting. In 1900 Norman had lamented his lack of funds, and the fact that he couldn't afford to buy paints or paper. The sum of one dollar would have helped enormously — two dollars would have overcome all difficulties, according to his diary. The years of poverty and want were never forgotten — Norman was always thrifty, and careful in spending money, his own or government funds.

Dr. R.H. (Dick) Handford told me of one incident during his own years working with Norman. A new car was being considered for the Lab. staff, and the merits of a four-door model, versus two-door were under discussion. The four-door model would cost a hundred dollars more than the other, not a small sum in those days. Dr. Handford felt the sense of thrift was being overdone in this case, and finally could restrain himself no longer. He expressed himself forcibly — "Well, you know we waste so blasted much time getting in and out of the damn thing!" He said there was a moment of profound silence before Norman said, VERY quietly, "Well, it's nice to have a very definite opinion." The rebuke was gentle, but it was there. But Dr. Handford recalled that the next car bought was a four-door model.

This was the first Entomological Laboratory built at Aweme, within four years needing an addition for the work and staff there. This Lab. of 1919 was replaced in 1923 by a slightly larger building, which became known locally as "The Bug House". It was the stopping place of a Sunday for many parties on an outing from Brandon or the immediate district. A tour through the "Bug House" with either Norman or Maida as guide was popular with all ages. The new Lab. had space for showcases of butterflies and moths, with walls hung with items of natural history interest. A large grey papery hornet's nest hung next to the tiny nest of a hummingbird.

But the science of Entomology has developed considerably over the past 50 years. The studies that took place in these little buildings have expanded until they need edifices such as this to house the specimens, records and staff employed in continuing research and tabulating information — and there are still complaints of “not enough room”.

We who remember Norman Criddle with love and admiration looked upon him as a man of many facets and talents. He was respected, admired and honoured by his friends, his colleagues, and those who knew of him only through the legacy of his work, the benefits of his earlier research they used to further their own. But he was very much a man of his own era. In today's world of specialization he would find the limitations of working in one field, or on one species only, too restricting. He was “Field Entomologist” for Manitoba, and perhaps grasshoppers were the species he was researching, but that didn't limit his observance to them. He was just as aware of everything else around him as he was of the hoppers.

In his era, when “horsepower” usually meant just that, not the latent energy of a machine, “blinkers” were used on harnessed horses — supposedly to keep them looking straight ahead — at the furrow being ploughed, or the road they were following — instead of letting their attention wander to things around them. “Specialization” to Norman would have been “wearing blinkers” — pursuing one narrow trail of study instead of being able to observe the total environment. His field of study differed greatly from that of entomologists today. His articles on Tiger beetles, covering a period from 1907 to 1919, were based chiefly on observations within a 12-mile radius of his home. The sandhills of Onah, now non-existent, were only about nine miles away. Collecting in the Bald-head hills would have meant a 15-mile trip. Family outings and field trips there did not begin until cars were more common and speedier than horses and wagon. Today, entomologists hop into their cars and drive over a hundred miles a day, to gather new specimens.

Norman's work was primarily with grasshoppers — or as he might be classified today — he was a “Grasshopper man”. But he would not have liked such a label. His studies of the hopper and the damage its kind inflicted on the environment, including crops, did not lessen his observations on all other aspects of natural history. He kept up his bird migration records; continued weather reports begun by his Father, and later passed on to Maida so they formed a continuous record from 1884 to 1960. He made Lepidoptera collections for which he traded on a world-wide basis; wrote articles on a variety of subjects for such publications as the Canadian Field-Naturalist, the Canadian Entomologist, The Auk, the prairie's Nor' West Farmer. “A Calendar of Wildflowers” and “A Calendar of Bird Migration” were compiled for publication. Mr. Hoyes Lloyd in an Obituary column stated that a list of his articles included 69 titles in entomology, 31 in ornithology, 7 in botany, 11 in mammalogy and general wildlife, and 7 of miscellaneous character — 125 in all. The watercolour paintings of Manitoba wildflowers had proved the first step toward his task of illustrating the “Farm Weeds” and “Fodder and Pasture Plants” for the Department of Agriculture. Some of his paintings were exhibited at the St. Louis World Fair in 1903. Pollen counts for allergy studies were carefully listed, and have been incorporated recently into Dr. M.G. Dudley's book “Air Borne Allergens.”

But how would he fit into today's world of entomological science? Emphasis today is on specialization. A specialist has been described as one who knows more and more about less and less. After the Manitoba Entomological Society luncheon meeting two years ago, in conversation with one member, I raised a question about Tiger beetles, and suggested asking one of his colleagues about it. The response was quick — “Oh, he wouldn't know anything about that. He's a Ladybird man.” The reply made me aware of the difference between entomology today — and 60 years ago. Would anyone have made the same comment about Norman Criddle? I doubt it. He was aware of every species of flora and fauna — not merely a casual acceptance of the fact that they were all there. Dr. Kenneth M. King described the difference. He said entomological study in Norman's day was conducted from a naturalist's viewpoint, the observer's approach. Today the emphasis is on quantitative research and highly scientific methods.

Entomologists who worked with Norman had to be versatile. Mr. M. White recalled spending more than two hours early in the mornings, digging earthworms for four hungry crows that had been taken to Norman as orphans. The results of “R.M.'s digging were



devoured in a few minutes by the voracious little birds. The hungry babies rapidly became raucously demanding birds with ever-increasing appetites. In today's parlance, they were imprinted on Norman, though in his absence they would accept food from Maida or R.M. White. Early in the morning, Norman needed only to step outside the door and call to bring the four black angels flying in response. The winner got a favoured perch on the soft cap on Norman's head. Tapping a spoon on the tin can that held sour milk curds brought an equally quick reaction if the birds were within hearing distance.

Norman wrote an article about these crows. They developed one habit of hiding things. Impy used to poke a beakful of berries into Norman's breast pocket, then tuck his handkerchief back over them to hide the store. On another occasion, Demon had been devouring a mouse. It proved more than enough for a meal, so he wanted to hide the remains for a future snack. As his larder he chose — the back of J.B. Wallis' neck, stuffing the remnants of the mouse down inside his shirt collar for safe-keeping. Norman's article did not record "J.B.'s" comments.

Norman's love of birds and his acceptance of them, was shared by Maida as we see here. Cleaning grain produced a good supply of weed seeds which was appreciated by the birds during the cold of January and February. Redpolls would perch along the top of the granary door, peering in at Maida as she filled her pail, as if urging her to hurry. When she emerged, the birds clustered over the pail, around her feet, and nestled on her shoulders and arms. At one time she sat in the snow while 30 happily fed on the seeds spread over her lap.

Maida was "kid sister" to Norman, and someone special. In earlier years they shared morning talks with their Mother as she breakfasted in her room. Somehow Norman always seemed to be coming out of his room just as Maida brought up the breakfast tray. He would open the door for her, and then join her as they sat on the end of the bed, sharing a quiet chat with their Mother. Perhaps it was these talks that helped them to gain some of her philosophy towards life, her policies in making the best of whatever life offered. There seemed always to be a special rapport between them. After the death of their Mother in 1918, Maida took on the self-appointed task of carrying on her role as homemaker. She also became hostess to Norman's co-workers and colleagues, for all who worked with him stayed in the house. There were no hotels or boarding houses nearby. Her work kept her busy, but Norman made sure she enjoyed experiences outside St. Albans. He took her with him to Ottawa, to conferences such as at Blairmore, to give her a chance to meet different people. Both were shy people — perhaps they encouraged each other's self-confidence.

I am indebted to Dr. Paul Riegert for an extra bit of information. He said that Norman was known as "The Grand Old Man of Entomology". When a project or plan had been discussed until all ideas seemed exhausted, it would be referred to the "Grand Old Man" to see what he thought of it, and what new suggestions he could offer. A final decision was postponed until Norman's ideas or approval came. This nickname was in the nature of an affectionate salute to his "wisdom of the ages" and perhaps to the influence his example had on their lives.

One of Norman's regulations concerned monthly meetings with all the staff. These gave each member a chance to air problems, suggest improvements, and discuss matters that could mean greater efficiency in the Lab. He also made it a rule to have the junior members speak first — to give them confidence, and to encourage them to voice their own suggestions before remarks by the senior men might make them hesitant to speak, feeling that any ideas they put forward would not be worthwhile to those more experienced and knowledgeable.

In 1929 the International Great Plains Crop Pest Committee Conference was held at Aweme. A copy of the Minutes provides quite a contrasting picture to an Entomological conference of today. The hotel accommodation was not quite up to Holiday Inn standards. But according to the preoccupation of this industrious group, something of entomological importance was to be found at Aweme — perhaps one of these little fellows.

Entomologists took their work very seriously in those days.

Field trips were a part of the conference program just as they are today.

Time for relaxation was included as Mr. Gordon Crawford shows here, lounging on the grass after a picnic supper at St. Albans.

Picnic suppers were something of a tradition at St. Albans — the name of the family home at Aweme. Perhaps they were a reminder to the family of those first days of homesteading when tent life afforded neither table nor chairs, and picnic meals were the rule and a matter of necessity. But whether a Sunday evening meal after a game of golf, or part of the program offered to conference members, the picnic supper was usually enjoyed by everyone.

In regard to this particular conference of 1929, I am indebted to Dr. Paul Riegert for another incident — for sharing it with me, and for permitting me to use it today. One member from Montana planning to attend had likely heard the names Aweme and Treesbank — on papers, entomological data, or correspondence. But that was the extent of his knowledge. To attend the meeting, he had to be able to get there. So he wrote to the Program Chairman, Mr. H. Seamons of Lethbridge, and went right to the point: "Where in H . . . is Treesbank?" Mr. Seamons chuckled — and knowing Norman would also be amused, forwarded the letter to him for the reply. Norman's answer to Mr. Mabee was a quickly sketched map. X-es marked Brandon and Douglas. Formal straight roads were uncommon in the area, so a wiggly line indicated the direction, and "15 miles prairie trail" gave distance and road condition. "Long fence" and "Swamp" were written in as guides. "Schools" provided a landmark to reassure the wanderer that he was indeed on the right trail. Another X at the other side of the map was marked "Ent. Lab.", showing his final destination. Since his name appears on the list of those attending, it can be assumed that Norman's directions were clear enough.

*Norman Criddle and crows — 1926*



*Photo by Dr. R.D. Bird*

Norman Criddle died on May 4, 1933, just ten days before his 58th birthday. Official obituaries and tributes to his memory may be found in *The Auk*, the *Canadian Field-Naturalist*, the *Canadian Entomologist*, written by some of his friends and contemporaries — Hoyes Lloyd, Dr. A. Gibson and Mr. Crawford. The best tribute I could pay him is to quote his "Creed", the philosophy and rules for living which he took from the writings of R.G. Ingersoll, and which he conscientiously tried to follow throughout his life:

**"MY CREED":**

To love justice; To establish freedom in its widest sense in harmony with justice and the security of others;

To look for the best in all men;

To fight selfishness in every form and slavery in both mind and body;

To be honourable, kindly and charitable;

To see the faults in human nature yet be tolerant of its weaknesses;

To make the best of the worst; To make friends but no enemies;

To help my fellow men;

To seek the truth and build upon its foundations;

To live in hope that my life is worthwhile, and in dying to leave the world better than I found it at the beginning.

## Notice — Avis

Please note that the revised By-Laws were approved by the Minister of Consumer and Corporate Affairs on 23 January 1978 and are now in force. They are correct as published in *Bulletin 9(2)* if the following correction is made: In Article XIII, Clause 4, line 2, remove the words "1st and".

Veillez noter que les statuts révisés furent approuvés par le Ministre des Consommateurs et des Corporations le 23 Janvier 1978 et sont maintenant en vigueur. Ils sont exacts tel que publiés dans le *Bulletin 9(2)* si on corrige l'Article XIII, clause 4, ligne 2 en effaçant les mots "1er et". En cas de doute, la version anglaise s'appliquera parce que c'est la version juridique, approuvée par le Ministre.

G.H. Gerber  
Secretary/Secrétaire

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### By-Laws Committee — Comité des Statuts

Veillez noter que les lettres patentes, (la chartre) et les statuts, (la constitution), sont maintenant disponibles en français du Secrétaire, grâce à M. René Martineau, membre du Comité des Statuts, et M. André Cloutier, membre actif, qui, de bonne volonté, a aidé le Comité. Afin d'améliorer les services aux membres de la Société, il y a des plans pour rendre disponibles, de plus en plus de services en français, notamment les règles et règlements.

The letters patent (the charter) and the by-laws are now available in French from the Secretary thanks to the efforts of M. René Martineau, member of the By-Laws Committee and Mr. André Cloutier, Active Member, who freely gave his services to the Committee. In order to improve the services of the Society to its members, more use is being made of French, and in particular, efforts are being made to have rules and regulations translated.

D.C. Eidt  
Chairman/président

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### HOW BILINGUAL CAN YOU GET . . .

Because of his savoir-faire, and in spite of the faux-pas normally associated with the job, our president, using all the authority that is de rigueur for such occasions, has managed to conduct this board meeting to a satisfactory conclusion. Considering all the laisser-faire, insouciance, cretinism and naïveté currently associated with government laisser-aller and science policy fait-accomplis, we can be thankful that we all managed to survive this reunion and hope everyone will have a bon voyage.

(from the mid-term board meeting, Vancouver 1978)

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### THE INTERNATIONAL CODE OF ZOOLOGICAL NOMENCLATURE

The draft third edition of the International Code of Zoological Nomenclature is now available for comment by zoologists. Copies may be obtained (price £2.50 surface mail, £5.00 air mail) from the Publications Officer, International Trust for Zoological Nomenclature, c/o British Museum (Natural History), Cromwell Road, London SW7 5BD, UK. Comments should be sent as soon as possible, and in any case before 30 November 1978, to the Secretary, International Commission on Zoological Nomenclature, at the above address.

A paper explaining the major changes proposed by the Commission's Editorial Committee to the existing Code has been published in the *Bulletin of Zoological Nomenclature*, vol. 34, part 3. Copies may be obtained (price 50p) from the same address as copies of the draft Code.

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

This summary continues the series of reports on Pilot Study Progress published quarterly in the Bulletin.

### Interim Proposal

#### Submission

The Society's proposal for interim funding (July 1978 to March 1980) — see *Bull. Ent. Soc. Can.* 9 (4): 141 — together with a Report on the progress of the Pilot Study to November 30, 1977, was presented to officials of Agriculture Canada (lead department for the Pilot Study contract) by President-elect F.L. McEwen on behalf of President W.G. Wellington early in December.

In summary the proposal requested support:

- to continue the Biological Survey organisation, consisting of a Secretariat and a Scientific Committee, from July 1978, the termination of the Pilot Study, to March 1980, the first date at which a continuing Biological Society could be supported. This organisation would allow: discussion and review of programs, facilities and policy in systematic and faunistic work; development of cooperative programs in field and laboratory; maintenance of up to date registers of personnel, etc., and continuation of a clearing house for information on current operations.
- to continue to develop salient features of a Biological Survey operation, extending work on those aspects completed according to the terms of the Pilot Study contract.
- To begin to implement the policies for systematic and faunistic work defined by the Pilot Study. This would include encouragement for the development of regional collections, and of several new projects for exploration of the insect fauna intended to stimulate a broad response in significant areas of activity. The projects proposed involved work on selected groups in the Yukon territory and in Newfoundland, and across Canada on the insect fauna of *Vaccinium* spp. In addition, assistance in the coordination of the many existing projects (in various departments) on cutworms was proposed to exemplify the way in which the survey would function.

#### Subsequent Responses

Agriculture Canada undertook to review the documents submitted. They informed the Society in mid-January that Agriculture Canada, in view of its stated mission and objectives, would be unable to provide funds for the interim period. However, Agriculture Canada as lead department for the Pilot Study undertook to assist consideration of the proposal by other interested departments. The Society understands that at the time of writing, discussions are in progress between the Department of Supply and Services and other interested agencies (potentially, Atomic Energy of Canada, Environment Canada (Canadian Forestry Directorate, and Fisheries and Marine Service), Indian and Northern Affairs (Parks Canada), Ministry of State for Science and Technology, National Museum of Natural Sciences, National Research Council, Science Council of Canada).

#### Visits with entomologists

The Secretariat concluded its second series of meetings with entomologists in establishments across Canada (see *Bull. Ent. Soc. Can.* 9 (4): 142) with visits to Lethbridge, Alta.; Sault Ste. Marie, Toronto, Guelph, London, Vineland and Harrow, Ont.; St. John's, Nfld., Halifax and Kentville, NS; Charlottetown, PEI; and Fredericton, NB.

Dr. André Francoeur, Scientific Committee, spoke about the Pilot Study with Quebec entomologists, both at the Annual meeting of the Société Entomologique du Québec at Trois-Rivières, and at a meeting of the Quebec City Section of that Society.

Fruitful discussions developed at these meetings on the draft recommendations for a continuing Biological Survey of the Insects of Canada (see *Bull. Ent. Soc. Can.* 9 (4): 141-142), and on other matters.

## **Publications**

### *List of Entomologists*

The "Annotated List of Workers on Systematics and Faunistics of Canadian Insects and Certain Related Groups", including a supplementary section derived largely from late questionnaire returns, was published. It was circulated during January 1978 to the 433 individuals on the list, to organizations that are users of entomological information, and to certain other parties. Copies are available to others on request. This list is intended not only to document the resources of personnel for a Biological Survey of the Insects of Canada, but especially to assist the cooperation between entomologists needed for such a survey.

### *List of Collections*

The list of *Collections of Canadian Insects and Certain Related Groups*, intended to support the rational exploitation and maintenance of collections of preserved Canadian arthropod material, appears as an insert in this issue of the *Bulletin*.

### *Canada and Its Insect Fauna*

At the time of writing (early February), most of the 45 contributions for this publication (totalling nearly 500 typescript pages to date) have been received, thanks to the excellent cooperation of the many authors involved. Some manuscripts have been returned to authors for adjustment in the interests of the consistency of the whole volume. Reviewing and editing of other contributions is proceeding.

## **Cooperative effort**

A "List of material required for regional or national revisions and faunistic studies" for 1978, with 39 entries, and a "List of requests for cooperation", with 18 entries (based largely on questionnaire returns) were circulated with the *Annotated List of Workers* . . . in order to encourage cooperative efforts during 1978. Copies are available on request. Additional entries should be sent to the Secretariat as soon as possible, and will be compiled as a supplementary list to be distributed at the end of April.

More material on the 1977 'list of requests' was transmitted (see previous *Bulletins*). In addition, several sources of trapped insect material were made available through the Secretariat to workers on the parasitic Hymenoptera.

The Secretariat continues to maintain lists of expeditions and of facilities for entomological work that allow it to respond to specific requests for logistic assistance in summer fieldwork.

## **Scientific Committee and Secretariat**

### *Membership*

Dr. E.G. Munroe resigned from the Scientific Committee under pressure of his research commitments. Dr. I.M. Smith agreed to chair the study group on "Computer storage and retrieval of biological information" formerly chaired by Dr. Munroe. Dr. A.P. Nimmo left the Secretariat (February 1, 1978), to accept a position to work on the insects of Alberta.

### *Meeting*

The third meeting of the Scientific Committee will take place in Ottawa on 16-17 March 1978.

## Panel Discussion on a Biological Survey

On January 4, 1978, at the National Museum of Natural Sciences in Ottawa, Dr. E.L. Bousfield (National Museum of Natural Sciences; Scientific Committee) chaired a panel discussion on "Biological Survey of Canada". This was sponsored jointly by the National Museum of Natural Sciences and the Canadian Society of Zoologists on the occasion of the annual meetings of the Canadian Society of Environmental Biologists and the Canadian Conference on Freshwater Fisheries Research. The invited speakers were Mr. J.A. Downes (Vice-chairman of the Scientific Committee), Dr. H.V. Danks (Entomologist-in-charge), Dr. L. Lemieux (Director of the National Museum of Natural Sciences) and Dr. R.M. Prentice (Entomology Coordinator, Agriculture Canada Research Branch; participating on behalf of Dr. E.J. LeRoux, who was unable to attend at the last minute).

This meeting revealed the Entomological Society of Canada's Pilot Study to a wider scientific audience (about 150 biologists attended). It exposed the great interest of the National Museum of Natural Sciences in Biological Survey undertakings of this sort. It also demonstrated that the involvement of Agriculture Canada in such a survey was difficult.

A more detailed account by the Chairman of the Panel Discussion will be found below.

Secretariat  
Biological Survey Project  
202 — 1316 Carling Avenue  
Ottawa K1Z 7L1

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## Report on a Panel Discussion on a proposed "Biological Survey of Canada"

A panel discussion group, designed to review the background and current status of the Pilot Study for a Biological Survey of the Insects of Canada and to explore the feasibility of extending its scope to include the entire Canadian biota, was held in the third floor lounge of the National Museum of Natural Sciences, Ottawa, on Wednesday, January 4, 1978, at 8:00 p.m. In attendance were members of the Ottawa scientific community, notably from Agriculture Canada, Environment Canada, the Museum, Carleton University, the University of Ottawa, and delegates to the concurrent meetings of the Canadian Society of Environmental Biologists (Frank Maheur, President), and the Canadian Council on Freshwater Fisheries Research (Joe Nelson, President). The panelists were Mr. J. Anthony Downes, Biosystematics Research Institute, Agriculture Canada; Dr. Hugh Danks, Entomologist-in-charge, Secretariat, Biological Survey of the Insects of Canada; Dr. Louis Lemieux, Director, National Museum of Natural Sciences; Dr. Richard Prentice, Entomology Coordinator, Research Branch, Agriculture Canada (substituting for Dr. Ed LeRoux, Director General); and the Chairman, Dr. E.L. Bousfield, representing the hosting agencies, the Museum and the Canadian Society of Zoologists.

The Chairman touched briefly upon the great diversity and geographical range of the Canadian biota. Despite more than 100 years of research, development of knowledge of this biota still represents a major scientific challenge. The Pilot Study for a Biological Survey of the Insects of Canada was established to assess the feasibility of a comprehensive survey of the Canadian insects and related arthropods, one of the largest and most intensively studied animal groups numbering probably more than 75,000 species. The vascular plants and the vertebrate animals are few in numbers of species, but are relatively well studied. However, the cryptogams and most invertebrates such as nematodes, unsegmented worms, protozoans, etc., are much more numerous but less well known, with perhaps as little as 10-15% of the estimated fauna described, let alone distributionally delineated.

The first panelist, Mr. Anthony Downes, provided a detailed outline of the background and rationale for the pilot project on insects, modestly downplaying his own very significant role in getting the project "off the ground". He also assessed the study resources (collections, institutions, systematists) and financial resources available for the project, including contributions from various government departments.



Dr. Hugh Danks followed up on the current status of the Pilot Study, after its first year of operation. He commented mainly on three aspects of the work, namely, the documentation of available knowledge and resources, the cooperative efforts of research agencies, and preliminary recommendations for the proposed Biological Survey of Canada, to be finalised only at the end of the Pilot Study. Thus, a strong national survey centre is necessary but should be matched by strong regional centres for research; the existing pool of professional and trained taxonomic personnel should be complemented by outside (especially amateur) workers on contract; and the scope of the insect work should be expanded to include other animal groups and plants only after the entomological project is established successfully. Long-term stability of the project would likely be achieved only through incorporation of the survey headquarters in an existing federal governmental agency. Its role would be largely the review of national policy and national goals, and the coordination of work by participating agencies across the country. Dr. Danks noted that the final report of the first stage Pilot Project is to be completed by June 1978. A report of the preliminary results of the Pilot Study (to November 1977) had been submitted by the Entomological Society of Canada in support of an interim proposal that would continue the work of the project into early 1980, if interim funding by Treasury Board is approved. This would maintain existing initiatives while allowing the government to respond to the recommendations of the final report.

Dr. Louis Lemieux dealt mainly with the expansion of the Insect Survey to include all Canadian biota. In developing the need for large scale, continuing survey work in Canada, he modelled his recommendations on procedures followed by the Australian Ministry for Science, and to a lesser extent on the Geological Survey of Canada. Thus, one government agency should be identified as a coordination centre which, in cooperation with other interested organizations and individuals, should plan the survey and serve for storage and retrieval of collections and data. A suitably experienced government agency would be the National Museum of Natural Sciences; it already encompasses the curatorship of National Collections of many plant and animal groups, and has long supported research work and interpretative displays on the other biota, including the insects. Dr. Lemieux concluded hopefully that the government of Canada would not shirk its responsibilities in leaving the conduct of surveys to societies, universities, etc., but would lead the way as did the government of Australia.

Dr. Dick Prentice (backed by Dr. Doug Miller, CDA) reviewed both positive and negative aspects of the Pilot Study to date. He conceded the positive accomplishments of completed and proposed publications, and noted the proposed government plan for contracting out work to the private sector, but nonetheless painted a blunt and sobering picture of the financial difficulties facing the program. He felt that the long-term, continuing basis for the program as indicated by the Society's interim proposal was too open-ended and its objectives not entirely clear. He cautioned that little new money is likely available for contracting out since anticipated funds from various government departments are already committed for existing projects for some time to come.

Participants from the floor led a spirited discussion of issues raised by the panelists and contributed excellent points of their own. Dr. Henry Howden (Carleton University) suggested that a cost analysis of the program (in terms of a dollar value for each species investigated) would give a better perspective on anticipated program achievement, especially in relation to government expenditure on existing whole organism biology programs. Dr. Allen Keast (Queen's University) stressed the need for a fundamental change in federal governmental regard for the value of national collections and associated data, and the need for regional centres of research excellence (with active support of the provinces also). Dr. Cas Lindsey (University of Manitoba) gave examples of the current waste of effort by uncoordinated biological surveys, an inefficiency that could be alleviated not only by a coordinating Secretariat, but perhaps by an inexpensive "newsletter" that listed priority research topics and priority areas, and would urge governmental support of such priority items in preference to others. Dr. Don Smith (Carleton University) criticised the current government system of "contracting out" scientific work, especially ecological surveys, to the private sector. He noted that too often the work was done too rapidly, at too high a cost, without quality control because voucher specimens (for regional identification) are not deposited in responsible institutions such as those in charge of our National Collections. Perhaps governmental sup-

port for survey work by industry and the private sector should be made contingent on the deposition of voucher specimens, and on the building up of their own reliable reference collections.

The net consensus of the panel presentation and discussion from the floor was an overall positive endorsement of the need for a large scale biological survey of Canada, beyond the terms of reference of the Pilot Project and proposed Insect Survey; however, the way to achieve this end is not yet clear. Several topics that might have been treated, or elaborated upon more fully were (1) the impact of the proposed Biological Survey on national priorities, and its effect on science *per se*, (2) the value of long-term funded programs on career opportunities for students in systematic biology, and (3) the potential role of this Canada-wide, non-political program as a unifying force for the social goal of national unity.

E.L. Bousfield  
Panel Discussion Chairman

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### FORTHCOMING MEETINGS

St. Lawrence University, Canton, New York: *Second International Field Workshop on Aquatic Invertebrates*, with special emphasis on the Hydracarina, or Water Mites. From 29 May to 10 June 1978. The first week will be conducted at the University campus in northern New York. The second week will be spent at the Queen's University Biological Station on Lake Opinicon (Chaffey's Lock), Ontario. The course will be conducted by staff members from St. Lawrence University, Queen's University, Royal Ontario Museum and Universiteit van Amsterdam, Netherlands.

Instruction will be at advanced undergraduate level. Undergraduates or recent graduates with at least one college level biology course are eligible for admission. A comprehensive fee of \$275 (U.S. funds) will cover course registration, meals, lodging and field trip transportation.

Further information from Dr. Robert M. Crowell, Course Director, Department of Biology, St. Lawrence University, Canton, New York 13617. Telephone 315-379-5649.

The *1978 Annual Meeting of the Entomological Society of Ontario* will be held at the Pelee Motor Inn, Leamington, Ontario, from 1:30 p.m., 2 May 1978, to 12:00 noon, 4 May 1978.

This is an interesting part of the country, located in the most southerly part of Ontario. Some of the flora and fauna found in this part of the province is quite unique. The motel is situated near Point Pelee National Park. The Jack Miner bird sanctuary at Kingsville is only a short drive away.

*Canadian Society of Zoologists: Annual Meeting*, University of Western Ontario, May 14-17, 1978.

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### RECENT DEATH

**MAHEUX, Georges.** Ste. Foy, Qué. On October 11, 1977, age 88. Emeritus member ESC, member ESQ, member Royal Society of Canada. Retired provincial entomologist for Québec and Faculty of Forestry, Université Laval.



## THE BUGGED PAGE

### WHAT A RESPONSE!

In the June 1977 *Bulletin* of the Entomological Society of Canada (V.9, No. 2, pp. 82-83) a request was made by the Public Education Committee of the Entomological Society of Canada for personnel interested in promoting entomology in Canada. The committee is attempting to develop a resource listing of entomologists (professional, graduate students, technical staff, amateurs, etc.) who would be willing to help promote entomology in their area by field trips, lectures to high schools, providing slides for teachers, etc. We had only eleven responses outside the immediate committee. To those people we give our utmost thanks. But what of the other ca. 687 private subscribers in Canada? We are certain that far more of you would be willing to give some of your time. We are also certain that many simply filed the *Bulletin* away and never even noticed. Make sure others are aware of this request. It is hoped that eventually a resource list of personnel can be made available to high school science departments, elementary schools, and other entomologists. This is your final opportunity to be on the resource listing.

"PLEASE FILL IN THE ATTACHED FORM".

NAME: \_\_\_\_\_

POSITION: (professional, graduate student, technical staff, amateur, other) \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I may be of assistance in the following manner:

- |   |     |
|---|-----|
| 1) providing slides   | ( ) |
| 2) presenting an occasional lecture   | ( ) |
| 3) writing feature articles   | ( ) |
| 4) answer public inquiries in my area                                       | ( ) |
| 5) providing insects, specimens   | ( ) |
| 6) other, i.e. lectures in specialty areas, i.e. physiology, taxonomy, etc. | ( ) |

Your comments (i.e. do not want to be involved with certain groups, etc.) would be appreciated.

*Please return to:*

**Educational Committee**  
**E.S.C.**  
**c/o Dr. G. Surgeoner**  
**Dept. of Environmental Biology**  
**University of Guelph**  
**Guelph, Ontario N1G 2W1**

### THE FUTURE OF THIS PAGE

The Public Education Committee would like to make this page available to all entomologists both amateur and professional. Let it be a platform for your opinions. Do you have nagging questions you would like answers to? Write out the questions along with your name and address. Are you in need of distribution records? Specimens? Have you entomological books for sale? Let us know and we will make sure it gets on this page. Write to the above address.

## BOOK REVIEWS

**The Circulatory System of Insects**, by Jack Colvard Jones. 1977. Charles C. Thomas, Springfield, Illinois. 140 pp., 61 figs., + tab. addend. \$24.50, hardbound.

Jack Colvard Jones has been publishing on various aspects of the insect circulatory system for the past thirty years, and is highly qualified to monograph the subject. His book provides thorough coverage of the field, and reports fairly on the extent of our knowledge. It will likely appeal most to the specializing graduate student, who needs an authoritative introduction to all areas, but it is a most useful reference also for the established researcher. The publisher has provided an attractive book of excellent quality.

The text is relatively short, but the eleven chapters include essential information on the embryology of the circulatory system, the anatomy and histology of the various circulatory pumps, and an assessment of factors which affect the action of the pumps and the functioning of blood circulation. They include also a discussion of the athrocytes and the fat body, both intimately involved with the system, and descriptions of the origin, form, and functions of the blood cells. There is a brief account of views on phagocytic and humoral immunity. There are 16 tables of data in the text, and an addendum comprising three separate compilations of data on the heart rates, hemolymph volumes, and total hemocyte counts that are known for insects.

It is fair to say that Jones is conservative in his approach to this subject, and makes few attempts to synthesize or interpret the information that he has gathered. He is conservative also in his selection of illustrations, some of which are rather ancient. On the other hand, he exposes the gaps in our knowledge as well as the substance of it, and appeals for more research. Indeed, one is struck almost as much by the scope for research in this field as by the research accomplishments. It becomes apparent on reading, that the embryological picture is somewhat vague, that the physiology of circulation is not well understood, that there is controversy about the origins, functions, and classification of the blood cells, and that the processes of coagulation, immunity, etc. are almost completely without explanation. It is an open field for serious research.

Jones is to be commended for bringing us up to date once again in this area, and for gathering a wealth of widespread data into a single text.

J.W. Arnold  
Biosystematics Research Institute  
Agriculture Canada  
Ottawa, Ontario

**"Legion of Night. The Underwing Moths."** by Theodore D. Sargent. University of Massachusetts Press. Amherst Massachusetts 1976. 222 + Xii pages, 8 colour plates. Price \$15.00 U.S.

This book by Theodore Sargent is about the genus *Catocala* popularly known as the "underwings".

The group *Catocala* is very popular all over the world, mostly because of the species beautifully banded underwings, but also because of the great experience it is to get a *Catocala* Moth on sugaring. The true collector will identify completely with P.B.M. Allan, who in his book: "A Moth Hunters Gossip." Longon 1937, wrote about his long-sought *Catocala fraxini* Linné (the white underwing of Europe known in England, where it is excessively rare): "I am sure, I shall find *C. fraxini* at my sugar one night, and then I shall be so scared, that I shall bungle him hopelessly, and he will fly away over the tops of the trees, and I shall return home and sell my collection, and take to my bed and die . . ."

Sargent's book gives a complete survey of the Genus *Catocala* of the eastern United States, where 21 species are found.

The book contains two hundred twenty-two pages and eight coloured plates. The latter should however have been with a lighter background. In the book, there are also numerous black and white plates with both imagos and larvae. There are also some fine drawings by the author's wife Kathrine, which shows *Catocala* in Nature.

The book consists of eight chapters and five Appendices. In chapter I, Dr. Sargent gives an interesting history of the entomologists who described the species found in the area or wrote about these moths.

Chapter II is of great importance both for the collector and the scientist. In it you will find the species account, where the species are accurately described and similar species distinguished. The species account also gives the range of the species in the eastern United States, and it also discusses seasonal occurrence, larval foodplants and for some species, interesting notes on the behavioral aspects of the imago.

Of great importance to the collector are also Chapters III and IV, called The Lure of Sugar and Light, and gives us interesting information on collecting *Catocala* sp. with sugar, light or lighttraps.

Chapter V discusses aberrations and other freakish specimens.

For those persons whose interests extend to rearing and mating studies, the discussion of life-histories (Chapter VI) contains material of value.

The final two chapters of the book are devoted to a consideration of the anti-predator functions of *Catocala* forewings and hindwings respectively.

The book contains in the Appendix much statistical material on abundance of the various species.

Finally the book contains a very good bibliography on the genus *Catocala*.

I should really like to recommend this book to both amateur naturalists and professional biologists. It is a result of intensive research and of utmost importance, and should be in the book collection of all Lepidopterists.

Poul Svendsen  
Taastrup, Denmark



## SATELLITE PROGRAM IN STATISTICAL ECOLOGY

The International Statistical Ecology Program of the International Association for Ecology, the Biometric Society and the International Statistical Institute has planned a Satellite Program in Statistical Ecology in connection with the forthcoming Second International Ecological Congress. The emphasis will be on research, review, and exposition concerned with current problems in quantitative ecology and relevant quantitative methods.

For further information and participation forms, write to: Professor G.P. Patil, 318 Pond Laboratory, The Pennsylvania State University, University Park, Pennsylvania 16802, U.S.A.

# EIGHTH ANNUAL INSECT PHOTO SALON ENTOMOLOGICAL SOCIETY OF CANADA

20-23 August 1978

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

Award certificates and ribbons will be presented to the winners in each category and a small cash award to each first prize winner. 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 & White; b) Colour Prints; c) Colour 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 or 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 be sent to: Dr. W.B. Preston, Manitoba Museum of Man and Nature, 190 Rupert Avenue, Winnipeg, Manitoba R3B 0N2.
9. Entries must be postmarked 10 July 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 exhibit before a scientific society, the Entomological Society of Canada, and are to be returned to the sender. Make cheques or money orders payable to W.B. Preston. 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.

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## ENTRY FORM

### EIGHTH ANNUAL INSECT PHOTO SALON

Name .....

Street .....

City ..... Province/State .....

Postal Code ..... Member Ent. Soc. Canada .....

Fee enclosed. .... + return postage. ....

SECOND NOTICE

**Annual Meeting**  
**ENTOMOLOGICAL SOCIETY OF CANADA**

**August 20-23, 1978**

University of Ottawa  
Ottawa, Ontario

**SYMPOSIUM I, 21 August**  
"International Endeavours in Entomology"  
Chairman: E. Munroe

**SUBMITTED PAPERS, 21, 22 August**  
Contributors must complete the "Submitted Paper" reply form and send  
as indicated on page 28, *not later than April 30, 1978.*

**SYMPOSIUM II, 22 August**  
"Entomology in Review"  
A series of special interest groups including  
Urban Entomology, Environmental Toxicology  
and Spruce Budworm

**SYMPOSIUM III, 23 August**  
"Temporal and spatial changes in Canadian insect fauna"  
Chairman: J.A. Downes

**SPECIAL INTEREST GROUPS**  
In addition to those of Symposium II, informal conferences may be  
arranged on request. Please fill the appropriate form on page 28

**PHOTO SALON AND POSTER SESSION**  
See announcement on page 26  
and *Bull.* 9(4): 139-140

**SPECIAL INTEREST GROUPS REPLY FORM**  
(Deadline — 30 April 1978)

RETURN TO:  
Dr. D.R. Oliver  
Biosystematics Research Institute  
Agriculture Canada  
K.W. Neatby Building  
Ottawa, Ontario K1A 0C6

Participant's (Leader's) Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Topic \_\_\_\_\_

\_\_\_\_\_

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(Deadline — 30 April 1978)

RETURN TO:  
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Agriculture Canada  
K.W. Neatby Building  
Ottawa, Ontario K1A 0C6

Author's Name (Please Type) \_\_\_\_\_

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

\_\_\_\_\_

Title of Paper (up to 15 words) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

To be read by \_\_\_\_\_

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**CONTRIBUTIONS**

Contributions and correspondence should be sent to: B.J.R. Philogène, Bulletin of the Entomological Society of Canada, Department of Biology, University of Ottawa, Ottawa, Ontario K1N 6N5.

**BUSINESS INQUIRIES AND BOOKS FOR REVIEW**

Inquiries about subscriptions and back issues, and books for review should be sent to the Entomological Society of Canada, 1320 Carling Avenue, Ottawa, Ontario K1Z 7K9.

**DEADLINE**

The deadline for the next issue Vol. 10, No. 2 for June 1978 is 15 May. The approximate date of mailing will be 15 June.

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