

Proceedings of the Thirteenth Annual Meeting

of the

ENTOMOLOGICAL SOCIETY

of

ALBERTA



Calgary, Alberta

October 15th-16th, 1965

Proceedings of the
ENTOMOLOGICAL SOCIETY OF ALBERTA

Volume 13

October, 1965

OFFICERS - 1965

President	R. C. B. Hartland-Rowe
Vice-President	R. W. Salt
Secretary	G. D. Burgess
Treasurer	R. E. Stevenson
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Regional Director to E.S.C.	C. E. Brown
Editor	H. F. Cerezke

THE THIRTEENTH ANNUAL MEETING

The Thirteenth Annual Meeting of the Entomological Society of Alberta was held in Calgary on October 15th and 16th. The presentation of papers and business discussions took place in the Science Tower on the University of Calgary campus. The executive maintained thier headquarters at the Circle Inn. Cocktails, banquet and evening entertainment were held at Andy's Ranch Room.

The number of papers presented this year was 18, somewhat lower than in some of the previous years. However, the program proved to be highly informative, and a wide variety of topics were discussed, ranging from photography to sound production in insects. Attendance at the Annual Meeting was in excess of 50. The Society was again pleased to welcome many new foreign members who are graduate students in entomology.

As guest speaker at the banquet the audience was privileged to hear Dr. R. S. MacNeish, Head of the Department of Archeology at U. of C. In his talk Dr. MacNeish presented a fascinating account of the cultural development of corn with illustrations drawn from archeological evidence. Following the banquet a colorful display of slides was shown by E. T. Gushul.

Two insect collections were submitted this year and only honorable mention was being awarded to each contestant because of low quality.

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PRESIDENTIAL ADDRESS

by R.C.B. Hartland-Rowe

Ladies and gentlemen,

I am very happy to open this meeting of the Entomological Society of Alberta by welcoming you to this campus. This is the first time that the Society has met here and I hope this will be the first of many such occasions.

As I look around the room here it is evident that we include amongst our members, entomologists of a great many different kinds; agricultural entomologists, veterinary entomologists, medical entomologists, medical entomologists, pure entomologists and others. One of the dangers of a meeting like this is that people tend to listen only to those papers which deal with topics close to their own fields.

This, of course, is becoming a greater problem as the boundaries of knowledge are extended and as each of us learns more and more about less and less. The ultimate danger is that each small area will come to be understood only by a handful of individuals, each group speaking its own language and being incapable of communicating with the other groups. In the hope that this has not yet happened to us I would therefore like to ask the Chairman to open the first session, and to ask you all to listen to what other people have to say, even if you do not understand it.

ABSTRACTS OF PAPERS PRESENTED

A Preliminary Study of the Genitalia of
Female Tiger Beetles (Coleoptera : Cicindelidae)

R. Freitag

The structure within the bursa copulatrix were found to be specifically distinct and may be useful to group species within the genus Cicindela.

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An Entomologist with W.H.O. in Sarawak, Borneo

P. Graham

Sarawak lies on the northeast coast of Borneo. Seventy-five per cent of the country is covered by primary rain forest and the greater part of the remainder by secondary forest. Since the country is almost roadless most of the travel is by water. Slides of the country, the people and their dwelling houses were shown.

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Further Observations on the Hibernation
of Anopheles earlei

J. Shemanchuk

A short progress report was presented.

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The Effects of Temperature on the
Fecundity and Longevity of Eublemma
anavalis Moore (Lepidoptera : Noctuidae)

V. Sehgal

A significant increase in fecundity and a decrease in longevity of the moth was noted during July when the temperature was raised from 15°C to 30°C at Ranchi, India. Moths in December, however, failed to oviposit when subjected to 30°C. When fed on different sugars or when starved, the moths showed no significant difference in fecundity and longevity, indicating that they may not feed at all.

The Spectral and Energy Sensitivity of
the Infra-red Sense Organs of
Melanophila acuminata DeGeer

W. G. Evans

Melanophila acuminata DeG. has paired thoracic sensory pits containing approximately 100 infra-red sensitive sense organs. The spectral and energy sensitivity of the organs was investigated with a monochrometer using a behavioral response as a criterion of detection of the infra-red radiation. The lowest energy at which a response occurred was 0.6×10^{-4} watts/cm² in the wavelength region ranging from 3.5-4.1 microns. However, when the insects were stimulated with equal energies of infra-red radiation the most sensitive region was from 3.0 to 3.5 microns. Since Melanophila normally orients towards forest fires the significant aspect of these findings is that the peak radiation from a forest fire is in the 3.0-3.5 micron region and that a "window" in the atmosphere exists which allows radiation in the region of 3.5 to 4.1 microns to be transmitted without being absorbed by water or carbon dioxide.

The Distribution of Platypatrobus lacustris
Darlington (Coleoptera : Carabidae)

D. Larson

Platypatrobus lacustris, previously believed to be extremely rare, was found locally abundant in Quebec in an association with beaver. The insect is widely distributed in Canada east of the Rockies and in the northeastern United States.

Cinematography of the Site of Nucleation
and Ice Growth in Slow-freezing Larvae
of *Cucujus clavipes*

R. W. Salt

Ice formation following nucleation of a supercooled insect is usually so rapid as to make accurate observation difficult. The rate of ice advance is commonly of the order of 5 to 10 cm. per second. Feeding larvae of *C. clavipes* freeze very slowly, about 3 mm. per second, and allow the nucleation site and ice front progress to be determined fairly readily. As shown by color cinematography, nucleation occurs in the gut, mostly in thoracic segments 1 and 2 or in abdominal segments 4 to 7. Ice appears to penetrate the gut walls readily since growth laterally is as rapid as that along the gut lumen. A unique instance of double nucleation is recorded in both foregut and hindgut. Such an event would be virtually impossible in faster freezing insects.

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Further Observations on Reduced Weight
Gain in Red-infested Lambs

W. Nelson

Previous experiments were done on lambs manually infested with keds in October. Such lambs became resistant to keds in late March or April of the following year. Only after lambs became resistant did reduced gain (3-7 lbs.) become apparent. Marketing of lambs generally occurs during February or early March.

When we started experiments with lambs that had been infested all summer, they became resistant to keds in early January. Thus reduced gains became apparent nearly two months prior to marketing. In order that these lambs reach marketing weight they would have to be kept on feed about one month longer than they would normally have been kept had they been ked-free. Per cent yield of fleece was also reduced in these lambs.

The above observations refute the work of Pfadt in Wyoming and also our own 1954 work, both of which claimed no damage to feeder lambs by keds. The results also point up the danger of drawing conclusions from experiments based on inadequate knowledge of host-parasite relationships.

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Some Observations on Mosquitoes of
the Belleville, Ontario Region

P. Belton and Mary Galloway

Larval sampling and light trap collecting of adults has been carried out in Belleville area for the past two years. The numbers of mosquitoes caught occur in several peaks which coincide with certain weather conditions. When the trap was situated near a small stream in a mixed woodland more males than females were caught in seven of the first nine days of trapping. The numbers of males trapped at this site did not appear proportional to the size of swarms of male Aedes stimulans trapped at the edge of the woodlot. Swarms of A. obserratus, A. punctor and A. stimulans are reported in addition to five new records of species.

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Phospholipids in Insects

V. Krishnan

Our present knowledge of phospholipids in insects was reviewed. The information indicates a similarity between insects and vertebrates. Biosynthesis of phospholipids in insects appears to follow the same pathway as in vertebrates and Diptera seem to have a greater proportion of cephalins than other insects and vertebrates. A brief account of the possible metabolic products of phosphatides was discussed.

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The Environment and Pesticides

W. A. Charnetski

Man is changing his environment together with that of other animals in a constant drive to increase production and wealth. In attainment of his goals man has increased the use of insecticides and, subsequently, increased pollution. Accumulation and excretion of these insecticides by organisms and the movement of residues through food chains has been documented.

To investigate the problems associated with the use of insecticides in normal agricultural practices and the contamination of ponds and sloughs, a study of an aquatic environment was undertaken. Preliminary investigations have shown that dieldrin moved from the water to the mud and then by translocation to the adjacent vegetation.

Investigations of ducklings have shown DDT residues (sum of DDT, DDD, DDE) in the muscle ranging from 0 to 0.97 ppm, and in fat from 0 to 36.48 ppm, and dieldrin residues from 0 to 2.62 ppm in fat and 0.114 ppm in the muscle. It was interesting to note that the preen gland has substantially higher levels of residues (0.522 to 4.647 ppm DDT plus DDE and 0.090 to 2.290 ppm dieldrin) and thus could be recognized as an organ of possible excretion of insecticides.

The presence of chlorinated hydrocarbon residues in various plant and animal tissues has been recognized. The present rather limited residue analysis facilities could therefore be better used if investigations into the biochemical and biophysical properties and problems associated with insecticides were conducted.

The One-year Cycle Spruce Budworm,
Choristoneura fumiferana (Clem.) in
the Alberta-Yukon-Northwest Territories Region

R. E. Stevenson

The one-year cycle spruce budworm was first reported along the Mackenzie River in 1947. Since then it has been found in most stands of white spruce in the Liard, lower Hay and Slave River drainages of the Northwest Territories. Sizeable infestations were also reported along the Wabasca River, particularly where this river meets the Muddy River in northern Alberta. Annual surveys were initiated in 1955 and have been continued by the forest insect and disease survey to follow the distribution, abundance and damage of this insect.

Infestations have varied in size and intensity from year to year. For example, in 1955 the infestation extended approximately 288 miles along the Mackenzie River north of Fort Simpson, while in 1965 the insect was found above and below Fort Simpson for a total of about 416 miles. Along the Slave River between Fort Smith and Fort Resolution, populations have fluctuated widely. However, most stands in all age classes have been attacked to some degree.

Tree mortality, and especially tree top-killing have been more apparent each year, and the highest incidence of injury has been in the N.W.T. near the confluence of the Redstone and Mackenzie rivers, on the southern end of Long Island in the Slave River and at the junction of the Muddy and Wabasca rivers in northern Alberta. Prolonged periods of severe defoliation to white spruce regeneration and subsequent mortality may be equally important as the loss of mature trees.

Because much of the infested timber is located in remote areas it has been difficult to consider prompt utilization practices for

dead and dying trees. Chemical control programmes would be high owing to the inaccessibility of infested areas. Improved accessibility, suitable markets for the forest products and more information on the insect relationships in pure stands of white spruce may change this situation.

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The Distribution and Spread of the
Lilac Leaf Miner Gracillaria syringella (Fabr.)

Rita Murdoch

The lilac leaf miner is an introduced insect pest and was first reported in North America from four localities in Ontario in 1923 and from Puget Sound in Washington state in 1924. Since then it spread rapidly and is now found across the southern half of Canada and the northern part of the United States, except for an area covering Saskatchewan, most of Manitoba, North and South Dakotas, Nebraska and Kansas. The damage of the lilac leaf miner renders lilac and privet plants unsightly. In Alberta the insect produces two generations per year.

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Effect of Concentrations of Dietary
Cellulose on Growth of the
Grasshopper Melanoplus sanguinipes

A. J. McGinnis and R. Kasting

The effect of dietary cellulose on growth of fifth-instar nymphs of the grasshopper Melanoplus sanguinipes was determined by feeding diets composed of lyophilized wheat sprouts diluted with varying amounts of cellulose powder. Nymphs were caged individually and the amount of food consumed by each over a 4- or 5-day feeding period was measured by employing the chromic oxide index procedure. Nymphal weight gains were not significantly different whether nymphs were fed a diet containing all sprouts or one containing one part sprouts and seven parts cellulose powder. Results showed that nymphs were able to increase consumption enough to compensate for dilution of dietary nutrients, which accounts for the limited effect of diluting the diet as much as 8-fold. Nymphs fed a diet containing lyophilized sprouts diluted 16-fold gained significantly less weight than did those fed less dilute diets. However, nymphs lost weight when fed diets diluted further with cellulose powder. These results were compared with those of similar studies by others on chicks and mice and the significance of this compensatory ability was discussed.

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Feeding and Biology of the Bedbug
Cimex lectularius L.

M. S. Tawfik

Experiments were conducted to determine the rate of ingestion, expressed in mg./second, in the different stages of the bed bug. newly moulted individuals in every stage were taken from the standard culture and fed for different periods to find out the effect on moulting, duration, the pre-oviposition period and fecundity of the females. The results showed that starved nymphs do not moult but that they need not be fully engorged to moult. Variation of the blood meal does not affect the duration of the nymphal instar when the blood meal is enough to induce moulting. Longevity increases with the increase of the blood meal or the feeding period. Variations in the blood meal have no effect on the pre-oviposition period. Starved females never lay eggs. The number of eggs laid per female and the percentage of females that lay eggs increase with an increase of the feeding period. Variations in the blood meal of males do not affect the number of eggs laid per female but only the fertility of the eggs. Variations in the blood meals of both sexes do not affect the incubation period of normal eggs.

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Some Results of a Trapping Technique
for Adult Hylobius

H. F. Cerezke

A trap used to capture adult root weevils, Hylobius warreni Wood, was described and illustrated. For its construction a half-gallon sized container, a paper cup, a portion of a nylon stocking and a metal strip were used as basic materials. One trap was placed on each tree and its success in capturing adult weevils took advantage of the insects crawling ability as well as its nocturnal habit of ascending tree trunks.

All pine trees within one-fifth acre plots were supplied with traps and weevils were collected daily during intervals throughout the summer. Each captured adult was coded with a paint mark for individual recognition, then released for subsequent recaptures. From the data of recaptured individuals the dispersal behavior of this flightless weevil was described. The results suggested considerable random movement but the pattern and rate of dispersion on the forest floor appeared similar for both sexes. There was a consistent decline

in the number of weevils captured per day from the first of June to the end of August, 1965. On the average, females declined at a rate of 0.039 per day while males declined at a rate of 0.016 per day.

Making Black and White Negatives
from Color Slides

E. T. Gushul

Practical methods for making black and white negatives from color transparencies were described. For best results the color transparency should be clean, sharp, properly exposed, not too contrasty and preferably of a fine resolution. It is important to keep negative contrast under control by careful exposure and by development in dilute solution, or by pre-soaking and short development time in regular working-strength developer. A suitable method for determining the required exposure used a Norwood meter and an illuminator similar to that used for viewing X-ray negatives. An enlarger is used to focus the color slide image onto a suitable target that substitutes for the sheet film in its holder. Another acceptable variation utilizes a large format copy camera in vertical or horizontal positions with the slide trans-illuminated. When 35 mm. size negatives are made a slide copying apparatus is used either vertically or horizontally. Cropping can be done by any of these methods, within reasonable limits. The most suitable film to use regardless of negative size, is a fine grain panchromatic. It has fine resolving qualities and responds well to contrast control, either by developing techniques, the use of color filters or both. For unusual situations other emulsions such as a contrast process, etc. must be used.

It is hoped that many will be helped by this information.

Songs of Insects

B. Hocking

The mechanisms of sound production by insects and the significance of the sounds produced were discussed. Some consideration of aspects in need of further study was given. Tape recordings of sounds produced by insects, and some responses to these in man were used as illustrations.

Science Tower, U. of C.	Registration	Serious Business
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P. Graham and Members

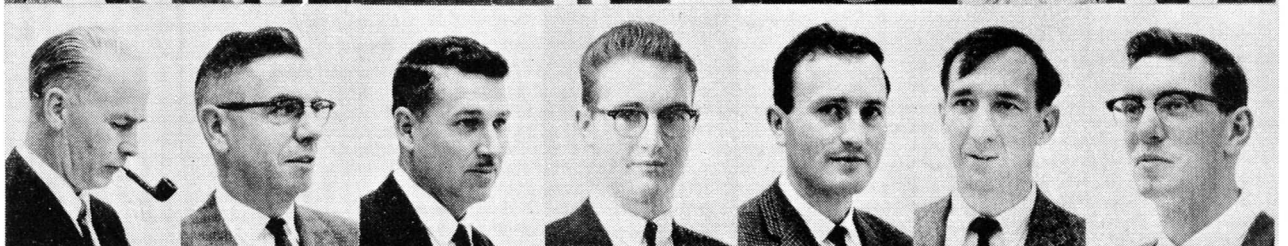
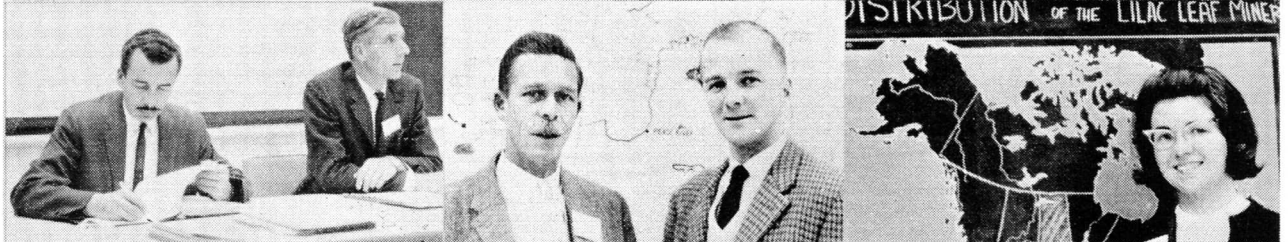
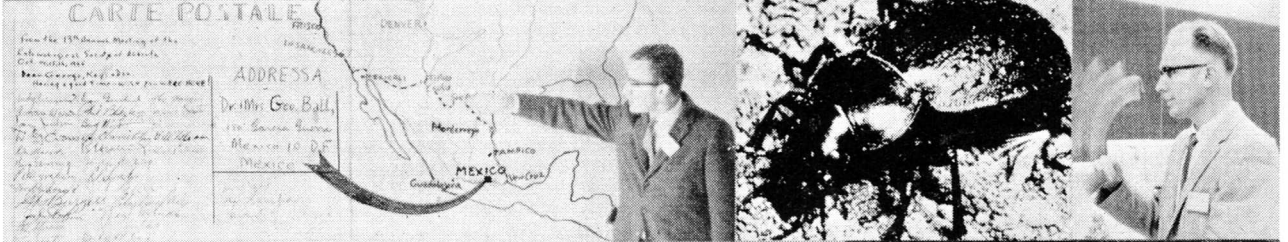
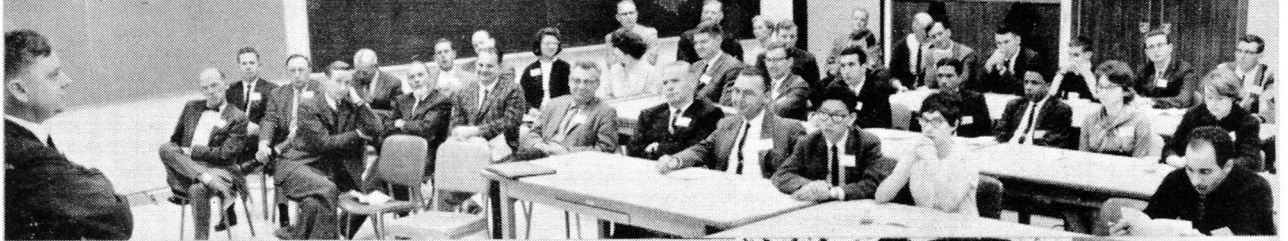
Alta. Ent. Soc. greeting to G. E. Ball	R. Freitag	Photo display	G.E.Swailes
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G. D. Burgess	R. Hartland- Rowe	H. A. Tripp R. E. Stevenson	R. Murdoch
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Coffee break	More coffee	L. A. Jacobson R. W. Salt A. M. Harper
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W. Charnetski	M. S. Tawfik	H. Khatam- ian	O. Abdul- nur	R. Murdoch	M. M. Galloway	Mrs. D. Froelich	Y. S. Krishnan
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N. D. Holmes	A. J. McGinnis	P. E. Blakeley	J. H. Shorthouse	H. F. Cerezke	W. G. Evans	D. J. Larson
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THIRTEENTH ANNUAL MEETING - CALGARY - 1965

W. A. Nelson	G. R. Hopping	V. Sehgal	P. Graham	L. A. Jacobson	J. A. Shemanchuk
W. G. Evans	Photo display	L. K. Peterson	G. R. Hopping H. A. Tripp W. A. Nelson A. M. Harper	J. L. Carr	
B. Hocking		Serious Business		O. Abdulnur S. P. Pillai V. Sehgal H. Khatamian	
J. Gurba	E. Gushul				An interesting paper
M. Chance L. A. Jacobson B. Hocking	W. G. Evans R. Hartland- Rowe	G. D. Burgess ?	Cocktails probably!		
L. K. Peterson J. B. Gurba L. A. Jacobson P. Graham	? ? ? G. E. Swailles S. Datt		Banquet		
A. Burgess H. Khatamian	Banquet		R. S. MacNeish R. Hartland-Rowe R. E. Steven- son	R. S. MacNeish	



ENTOMOLOGICAL SOCIETY OF ALBERTA

ENTOMOLOGICAL SOCIETY OF ALBERTA

Minutes of the Thirteenth Annual Meeting, Part I

University of Alberta, Calgary

15 October, 1965

The meeting was opened by the President, Dr. R. C. B. Hartland-Rowe.

1. The Minutes of the Twelfth Annual Meeting were adopted as published in the 1964 Proceedings on a motion by P. E. Blakeley and seconded by C. E. Lilly.

2. The following committees submitted by the Executive were appointed:

Nominating..... L. A. Jacobson - Chairman
R. E. Stevenson
W. G. Evans

Auditors..... R. F. Shepherd
R. W. Reid

Resolutions..... J. A. Shemanchuk - Chairman
P. E. Blakeley

Insect Collection Judges..... J. L. Carr - Chairman
F. McDonald
H. Tripp

3. Only a few copies of The Insect Collector's Guide were sold in 1965. F. McDonald moved that a sales committee be appointed. R. Freitag seconded the motion. Motion adopted. Members appointed to committee:

Calgary..... R. C. B. Hartland-Rowe
R. E. Stevenson

Lethbridge..... C. E. Lilly
J. Weintraub

Edmonton..... J. B. Gurba
W. G. Evans

F. McDonald moved that the appointed members be approved. Seconded by A. J. McGinnis. Motion carried.

4. R. C. B. Hartland-Rowe presented a report on the proposed Ent. Soc. Can. Meeting to be held in Banff on 11-14 September, 1966. A. M. Harper reported that the Canadian Society would accept these dates.
5. W. G. Evans moved that the Alta. Ent. Soc. continue to support Zoological Record with a donation of \$10.00. Motion seconded by A. M. Harper. Carried.
6. R. E. Stevenson reported that the Society Library may be within the premises of Forest Ent. Lab., Calgary. If found, the books will be sent to Dept. Entomology, University, Edmonton.
7. Ent. Soc. of Alberta requires a revised membership list to be made up from 1965 Registration Records.
8. B. Hocking presented a gavel to the Ent. Soc. Alta. The gavel is to be fitted with a suitably inscribed brass plaque, and presented to the Acadian Entomological Society. The Ent. Soc. Alta. will pay for the plaque and inscription.
9. J. B. Gurba suggested that the Society produce a publication on the Insects of Alberta for a Centennial Project.

B. Hocking suggested that leaflets dealing with individual insects or groups of insects would be more feasible.

J. B. Gurba added that pesticide control recommendations should not be included, only life histories and cultural controls.

B. Hocking could not foresee any copyright difficulties.

R. C. B. Hartland-Rowe mentioned the Centennial Natural History Publication for Alberta.

A. M. Harper suggested that further discussion be tabled until Part II of the Business Meeting.
10. In a discussion of the Insect Collection Competition, it was decided that the best way to improve the project would be for members to offer more assistance to the Insect Collection Committee.
11. A. M. Harper presented a report of the business meeting of the Ent. Soc. Can. 1965 which follows.

Report to the
ENTOMOLOGICAL SOCIETY OF ALBERTA
of the
BUSINESS MEETING
of the
ENTOMOLOGICAL SOCIETY OF CANADA
1965

The President, in opening the meeting, stated that the Board of Directors of the ESC felt it was their responsibility to go over all activities and make recommendations to the general membership for their approval rather than spend time by the membership in discussing each point separately.

ESC Honoraria

\$500.00 - Editor of The Canadian Entomologist
\$250.00 - Secretary
\$250.00 - Treasurer

Membership Committee

Membership is increasing satisfactorily so there was no need to take any action.

Common Names Committee

No action, as no requests were received for common names of insects.

Election Committee

Dr. F. O. Morrison, of MacDonald College, was elected President-Elect for 1965-66.

Directors-at-Large, 1965-67 - D. G. Harcourt
- A. W. MacPhee
- C. L. Neilson

Directors representing
regional entomological
societies, 1965-67
- C. E. Brown
- R. Martineau
- L. B. Smith

Archives Committee

The report recommended that the Committee be disbanded and all the material in the archives be returned to the original source, as neither personnel nor space could be found to look after the archives. Doctor Kevin made a motion, which was adopted, that the Committee remain active for one more year and continue their efforts to find someone to look after the archives. This motion was based on the fear that, once the material was returned, much of it would be lost and it had taken a great deal of time and effort to gather this material together for the centennial.

Scholarship and Awards Committee

The report recommended that the Committee be dissolved and that no action be taken on scholarships because of the difficulty of raising the necessary funds and making the selection of a suitable candidate. After much discussion over funds, awards, etc., it was recommended that the Committee remain active and look into the possibility of bringing worthy graduate students to the annual meeting of the ESC and help finance their attendance.

Appointment of Auditors

Dr. D. G. Harcourt and Mr. L. A. D. Roadhouse were appointed auditors for the coming year.

Resolutions Committee Report

The Committee thanked members staging the meeting and also organizations that helped finance the meeting.

Canadian Biological Societies Council

There was an organizational meeting at which the ESC was represented. The purpose of this body is similar to that of the AIBS in United States.

Commonwealth Foundation

This is an external affairs organization. The ESC was contacted in 1964 in regard to the establishment of this Foundation and indicated that they could not support it financially and that they felt that scientific information in entomology was already being readily disseminated to scientists in all parts of the commonwealth at present. In 1965 the executive of the ESC was informed that the Foundation had been established and that it would act as a clearing house for scientific and scholarly information.

Future Meetings

1966 meeting	Banff, Alberta	September 11-14
1967 meeting	Quebec (MacDonald College)	August or September

Funds for ESC Meetings

At future meetings the National Executive will allot \$500 general expense money for staging the meeting and up to \$700 to improve the scientific content of each annual meeting.

Installation of President

Mr. Ray Lejeune was installed as President for the forthcoming year.

September 14, 1965

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Moved by F. McDonald, seconded by A. J. McGinnis that the report be accepted as read. Motion carried.

ENTOMOLOGICAL SOCIETY OF ALBERTA

Minutes of the Thirteenth Annual Meeting, Part II

University of Alberta, Calgary

15 October, 1965

The meeting was opened by R. C. B. Hartland-Rowe.

1. J. L. Carr, Chairman of the Insect Collection Judges, informed the meeting that only honourable mention was being awarded for the two collections submitted because of low quality.

C. E. Lilly will be responsible to notify the contestants.

2. L. A. Jacobson, Chairman of the Nominating Committee, presented names of candidates for the new Executive. F. McDonald moved that these individuals be accepted. N. D. Holmes seconded the motion. Motion carried.

President..... R. W. Salt

Vice President..... B. Hocking

Secretary..... D. S. Smith

Treasurer..... A. M. Harper

Editor..... J. A. Shemanchuk

Directors..... J. B. Gurba - Edmonton
H. Tripp - Calgary
K. R. Depner - Lethbridge

3. R. E. Stevenson read the Treasurer's Interim Report. W. G. Evans moved that the report be adopted as read. L. K. Peterson seconded the motion. Motion carried.
4. J. A. Shemanchuk, Chairman of the Resolutions Committee, read the following report, and moved its adoption. W. A. Charnetski seconded the motion. Motion carried.

RESOLUTIONS

Whereas the 13th Annual Meeting of the Entomological Society of Alberta has been informative, refreshing and thoroughly enjoyed:

Be it resolved that letters of appreciation be sent to:

- (a) Dr. R. S. MacNeish, Head, Department of Archaeology, University of Alberta, Calgary, for his very inspiring and informative address and film.
- (b) Dr. H. S. Armstrong, President, University of Alberta, Calgary, for the very suitable accommodation provided for the meeting.

And Further be it Resolved that our thanks be extended to:

- (a) the past executive and the various committees whose efforts have made these meetings so successful.
- (b) Mr. Evan Gushul, who took leave to come to the meeting to take the traditional pictures for the proceedings and for showing a very interesting selection of his colour slides after the banquet.

Respectfully submitted,

J. A. SHEMANCHUK
P. E. BLAKELEY

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- 5. F. McDonald made a motion that the Alta. Ent. Soc. send representation to meetings of the Alberta Conservation Council. The new Executive to appoint representatives. Seconded by J. B. Gurba. Motion carried.
 - 6. L. A. Jacobson outlined proposals for the Canadian Ent. Soc. Meetings to be held in Banff from 11-14 September, 1966.

The following committee chairmen were chosen:

Program..... G. E. Swailes
Social..... P. E. Blakeley
Accommodation and Reception.. R. E. Stevenson
Finance..... A. M. Harper
Publicity..... G. D. Burgess
Banquet..... J. B. Gurba

Theme for the 1966 meeting - INSECT ATTRACTANTS. A tentative program was discussed.

Meeting closed at 12:15 p.m.

Signed: G. D. Burgess
Secretary

R. Hartland-Rowe
President.

Treasurer's Report

Contrary to past years the Entomological Society of Alberta did not openly solicit donations from chemical, grain and seed companies in 1965. It is hoped that those businesses will contribute a "little extra" in 1966 to aid with the Annual Meeting of the Entomological Society of Canada in Banff, September 11-14.

In 1965 we had:

37 members of the Entomological Societies of
Alberta and Canada

2 members of the Ent. Soc. of Alberta only

3 student members of the Ent. Societies of
Alberta and Canada

10 student members of the Ent. Soc. of Canada
only.

Financial Statement for 1965

Balance as at January 1, 1965 \$ 369.23

Receipts:

Dues - Ent. Soc. Alta.	\$114.00	
Ent. Soc. Can.	<u>386.00</u>	\$500.00
Registration - annual meeting	176.00	
Food and bar	<u>38.45</u>	214.45
Donation	<u>15.00</u>	<u>729.45</u>
		1,098.68

Expenditures:

Dues - Ent. Soc. Can.	386.00	
Prizes and scholarship	62.44	
Annual meeting	195.08	
Proceedings (printing)	60.22	
Gavel	3.75	
Receipt book	1.70	
Zoological Record	10.40	
Bank charges	<u>4.10</u>	<u>723.69</u>

Bank balance as at December 31, 1965 \$ 374.99

R. E. Stevenson
Treasurer

R. Hartland-Rowe
President

MAILING LIST, 1965 - 66

Members

Abdulnur, Mr. O.	Department of Entomology, University of Alberta, Edmonton
Adiosomarto, Mr. T.	Department of Entomology, University of Alberta, Edmonton
Awram, Mr. J.	Department of Entomology, University of Alberta, Edmonton
Ball, Dr. G. E.	Department of Entomology, University of Alberta, Edmonton
Ball, Mrs. K.	Department of Entomology, University of Alberta, Edmonton
Barron, Mr. J. K.	Department of Entomology, University of Alberta, Edmonton
Blakeley, Mr. P. E.	Research Station, Canada Agriculture, Lethbridge
Brown, Mr. C. E.	Canada Department of Forestry, Ottawa, Ontario
Burgess, Angie	Department of Entomology, University of Alberta, Edmonton
Carr, Mr. J. L.	R. R. # 4, Calgary
Cerezke, Mr. H. F.	Forest Research Lab., 721 Public Building, Calgary
Chance, Mr. M.	Department of Entomology, University of Alberta, Edmonton
Charnetski, Mr. W.	Research Station, Canada Agriculture, Lethbridge
Danielson, Mr. E.	Department of Entomology, University of Alberta, Edmonton
Datt, Mr. S.	Department of Entomology, University of Alberta, Edmonton

Depner, Mr. K. R.	Research Station, Canada Agriculture, Lethbridge
Edmonds, Mr. J. W.	Supervisor of Agriculture, Alberta Dept. of Agriculture Edmonton
Elliott, Mr. D. P.	4508 Grovehill Road, S. W., Calgary
Evans, Dr. W. G.	Department of Entomology, University of Alberta, Edmonton
Ewen, Dr. A.	Research Station, Saskatoon, Saskatchewan
Freitag, Mr. R.	Department of Entomology, University of Alberta, Edmonton
Froelich, Doreen	Department of Entomology, University of Alberta, Edmonton
Galloway, Mary	Department of Entomology, University of Alberta, Edmonton
Graham, Mr. P.	Department of Entomology, University of Alberta, Edmonton
Gurba, Mr. J. B.	Department of Crop Protection and Pest Control, Field Crops Branch Alberta Dept. of Agriculture, Edmonton
Gushul, Mr. E. T.	Research Station, Canada Agriculture, Lethbridge
Harper, Dr. A. M.	Research Station, Canada Agriculture, Lethbridge
Hartland-Rowe, Dr. R.C.B.	Department of Zoology, University of Alberta, Calgary
Haufe, Dr. W. O.	Research Station, Canada Agriculture, Lethbridge
Hobbs, Dr. G. A.	Research Station, Canada Agriculture, Lethbridge
Hocking, Dr. B.	Department of Entomology University of Alberta, Edmonton

Holmes, Dr. N. D.	Research Station, Canada Agriculture, Lethbridge
Hopkins, Mrs. M.E.P.	3 Canyon Drive N. W., Calgary
Jacobson, Mr. L. A.	Research Station, Canada Agriculture, Lethbridge
Kevan, Mr. P.	Department of Entomology, University of Alberta, Edmonton
Khatamian, Mr. H.	Department of Entomology, University of Alberta, Edmonton
Krishnan, Mr. Y.E.S.	Department of Entomology, University of Alberta, Edmonton
Kusch, Mr. D. K.	Forest Res. Lab. 721 Public Bldg. Calgary
Larson, Mr. D. J.	Department of Entomology, University of Alberta, Edmonton
Larson, Dr. Ruby I.	Research Station, Canada Agriculture Lethbridge
Lee, Mr. F. C.	633 Gore Avenue, Vancouver 4
Leech, Mr. R. E.	Department of Entomology, University of Alberta, Edmonton
Leung, Mr. C. K.	Department of Entomology, University of Alberta, Edmonton
Lilly, Mr. C. E.	Research Station, Canada Agriculture, Lethbridge
McDonald, Mr. F.J.D.	Department of Entomology, University of Alberta, Edmonton
McGinnis, Dr. A. J.	Research Station, Canada Agriculture, Lethbridge
Murdoch, Miss Rita	Department of Entomology University of Alberta, Edmonton
Nelson, Dr. W. A.	Research Station, Canada Agriculture, Lethbridge
Pankiw, Mr. P.	Experimental Station, Beaverlodge
McDonald, Mr. S.	Research Station, Canada Agriculture, Lethbridge

Peterson, Mr. L. K.	Research Station, Canada Agriculture, Lethbridge
Pillai, Mr. S. P.	Department of Entomology, University of Alberta, Edmonton
Pucat, Miss A. M.	Division of Natural Sciences, University of Saskatchewan, Regina
Reddy, Mr. M. J.	Department of Entomology University of Alberta, Edmonton
Reid, Dr. R. W.	Forest Res. Lab., 721 Public Bldg., Calgary
Robertson, Mr. R. H.	Research Station, Canada Agriculture, Lethbridge
Safranyik, Mr. L.	Forest Res. Lab., 721 Public Bldg., Calgary
Salt, Dr. R. W.	Research Station, Canada Agriculture, Lethbridge
Scott, Mr. J.	Department of Entomology, University of Alberta, Edmonton
Sehgal, Mr. V. K.	Department of Entomology, University of Alberta, Edmonton
Sharma, Mrs. N.	Department of Biology, University of Alberta, Calgary
Sharplin, Dr. Janet	Department of Entomology University of Alberta, Edmonton
Shemanchuk, Mr. J. A.	Research Station, Canada Agriculture, Lethbridge
Shepherd, Dr. R. F.	Forest Res. Lab., 721 Public Bldg., Calgary
Shore, Miss Joan C.	Department of Entomology, University of Alberta, Edmonton
Skirving, Marg.	Department of Entomology, University of Alberta, Edmonton
Smith, Dr. D. S.	Research Station, Canada Agriculture, Lethbridge

Stevenson, Mr. R. E.	Forest Res. Lab., 721 Public Bldg., Calgary
Steward, Dr. C. C.	Research Station, Canada Agriculture, Lethbridge
Swailles, Dr. G. E.	Research Station, Canada Agriculture, Lethbridge
Tawfik, Mr. M. S.	Department of Entomology, University of Alberta, Edmonton
Tripp, Mr. H. A.	Forest Res. Lab., 721 Public Bldg., Calgary
Wada, Mr. Y.	Department of Entomology, University of Alberta, Edmonton
Weintraub, Mr. J.	Research Station, Canada Agriculture, Lethbridge
Whitehead, Mr. D.	Department of Entomology, University of Alberta, Edmonton

Honorary Life Members

Hopping, Mr. G. R.	Forest Res. Lab. 721 Public Bldg., Calgary
Painter, Mr. R. H.	Livestock Insect Liaison Officer, c/o Research Stn., Canada Agriculture, Lethbridge
Seamans, Mr. H. L.	581 Fraser Avenue, McKellar Park, Ottawa
White, Mr. R. M.	R. R. #1, West Summerland, British Columbia