PROCEEDINGS OF THE TENTH ANNUAL MEETING

OF THE

ENTOMOLOGICAL SOCIETY

OF

ALBERTA

CALGARY - ALBERTA

NOVEMBER 9TH - 10TH, 1962

Proceedings of the

ENTOMOLOGICAL SOCIETY OF ALBERTA

Volume 10 January, 1963

C O N T E N T S

Proceedings of the

ENTOMOLOGICAL SOCIETY OF ALBERTA

Volume 10. January 1963

THE TENTH ANNUAL MEETING

The Tenth Annual Meeting of the Entomological Society of Alberta was held in Calgary, November 9th and 10th. The business meeting and presentation of papers took place at St. Cyprian's Hall and the banquet at the Highlander Motor Hotel.

The attendance of Mr. H. L. Seamans, now retired and residing in Ottawa, was a highlight of this year's meeting. Mr. Seamans was the recipient of an honorary Doctor of Law Degree at the fall convocation of the University of Alberta (Calgary) on Saturday, November 10th. This honor was awarded to Mr. Seamans for his valuable contribution to Agriculture, a result of his work in the field of entomology in Western Canada. Dr. and Mrs. Seamans were the Guests of Honour at the evening banquet.

This year's attendance at the Annual Meeting was 45, and 19 papers were presented. We were again pleased to welcome a group from the Saskatchewan Society.

The insect collections were all of high caliber reflecting a considerable amount of interest and effort by the competitors. Credit is due to those Society members who encourage and assist these young people.

PRESIDENTIAL ADDRESS

by N. W. Van Veen

Amateurs and the Entomological Society of Alberta.

In the last decade we have seen quite an upsurge in the number of amateur entomologists, but we have been able to attract only a few into the Entomological Society of Alberta. An amateur I believe is one who has an interest in one or several fields of entomology, most commonly in collecting and natural history, but does not (or can not) make this his full time occupation. It is well known that amateurs have in the past contributed valuable information to entomology as well as other fields of science. Mankind has benefited from this information, science in many instances relies on this kind of information, and entomology definitely needs it.

Our Entomological Society of Alberta is at present almost entirely a professional body. It consists largely of government and university sponsored entomologists, who hold annual meetings in different cities in the province for the reading of scientific papers and the exchange of views in agriculture, forestry, pest control etc. There is in actual fact, very little room for the amateur in deliberations of this type. As it stands now many an amateur who has been able to attend one of our meetings has felt a distinct gap between him or herself and the -------"lords", if I may use this relatively unjust expression. The amateur often feels there is little of value for him in the meeting and that he just sits there to fill up the chairs and pay his dues.

I personally know of at least half a dozen amateur Lepidopterists in this province. The majority do not belong to our society although only the good Lord knows how hard some of us have tried to drag them in. I said drag them ------ which in itself is wrong because one should be glad to have the opportunity to join. But why do these amateurs not join and why are we losing ones who have joined? I indicated earlier the feeling of many amateurs towards the annual meetings. Non-members ask what can the society do for me? --- how does it help amateurs who are just commencing? --- are there other amateur collectors there who I can talk to in my field of interest? The amateurs all have a common interest and a common goal. I feel they would like to belong to the society if they feel they would obtain some benefits from the associations, feel secure in the group, and are looked upon as worthy and contributing members.

While some of the amateurs are not yet at the stage where their contributions would be considered significant; others have made valuable collections, a knowledge of which would benefit us all. Examples in the latter category would include a former member, and I emphasize former. He is an ardent Lepidopterist who has collected extensively and actively for the last eight years in our province. He has a wonderful collection and a large amount of data available in his files. I would also include here a non-member, Lepidopterist, who has interested his whole family in the subject and they have been collecting extensively, particularly in northern Alberta and the Yukon territory.

I do not mean to imply in the preceding remarks that our society has made no effort to encourage amateurs. Some of the members have done a great deal of work along this line as evidenced in the annual collection competition. I might add also that I believe the majority of members would like to see a greater number of amateurs in the society and actively participating in its functions. The evidence suggests however that we are not making too much progress towards these objectives. I propose therefore that, starting right now, our Society, possibly in conjunction with the Societies in the neighboring provinces, undertake the following projects.

A. The compilation of a list of all amateur entomologists in the region, their addresses, and their specific interest. These lists then to be distributed as widely as possible.

B. Request these amateurs to furnish as much data as possible on their collecting activities, such as types and names (where possible) of the insects collected, dates of collection, area where collections made, and weather at the time of collection. This information to be compiled and redistributed to each amateur, as well as other interested parties.

C. The present members to set aside some of their valuable timeto assist the amateurs (e.g. once a month) in their quest for more knowledge as to methods of proper identification, morphology, methods of preparing specimens etc.

As an amateur myself, I believe that these steps would do much to encourage amateur entomology in Alberta and would bring more of the amateurs into the Society. Let us all think sincerely about the problem and try to make this an important goal for the Society in the coming years.

ABSTRACTS OF PAPERS

A Sex Attractant from *Limonius californicus* (Mann.)

C. E. Lilly

Male attraction to ethyl alcohol extracts of virgin females of the sugar beet wireworm, *Limonius californicus* (Mann.), proved the existence of a chemical sex attractant. In field tests male beetles were attracted from as far as 90 feet downwind, and as early as 7.10 a.m. with the air temperature at 55°F. In the laboratory, males tested in an olfactometer congregated on the active fraction (R_F = 0.85-0.9) separated by paper chromatography; antennectomized males did not respond. The attractant originated in that portion of the female abdomen dorsad to the fifth and sixth sterna. It has proven useful in the study of adult behavior, and as a survey tool.

Hybridization in Tiger Beetles

R. Freitag

A brief description of *Cicindela duodecimguttata* and *Cicindela oregona* is given. Their Canadian ranges and zone of contact on the eastern slopes of the Rocky mountains are outlined. The Compound Character Index method is defined and applied in analyzing variation in sample populations taken from areas across western Canada. The extensive range of variation in the area of overlap is concluded to be due to hybridization. This narrow zone of jybridization is discussed but no change is proposed in the taxonomic status of *Cicindela oregona* and *Cicindela duodecimguttata*.

Behaviour of Aedes in Relation to Repellents

A. A. Khan

The behaviour of Aedes mosquitoes in relation to repellents was studied in the field and in the laboratory. Though blood feeding behaviour was the chief interest in this study, the feeding behaviour of Aedes on raisins and during oviposition were also examined in relation to repellents. It was found that repellents affect almost all the biological functions of these mosquitoes.

Observations and Experiments on Dermacentor andersoni Stiles in Southern Alberta

J. Weintraub and W. A. Nelson

Seasonal incidence of ticks (Dermacentor andersoni Stiles) at Police Coulee in southern Alberta indicated a peak in number of adults in mid-April and gradual decline to the end of July. Late-season collections were more effective in the evenings, showing a shift in behaviour of the ticks to evade extreme heat.

Some infested sheep exhibited signs of resistance. The resistance was associated with factors that had caused resistance to sheep keds. Vitamin A deficiency in the sheep appeared to restore the susceptibility to ticks as it had done to keds. Two of six sheep in the Vitamin A deficient group showed symptoms of tick paralysis. Subsequent tests with guinea pigs showed that neither Vitamin A nor Vitamin C deficiency increased susceptibility of the host to tick development, survival or tick paralysis.

Repeated infestations of the guinea pigs produced a partial immunity to adult ticks, in which the infested pigs showed the "Trager" symptoms at the attachment site, and complete immunity to infestations of the larval stages of D. andersoni.

Ecologies of the Species of Bumble Bees, Bombus Latr., in the Subgenus Bombias Robt.

G. A. Hobbs

Species of the subgenus Bombias Robt. are nearctic in distribution. There are only two species in the subgenus, B. auricomis Robt. and B. nevadensis Cress. Both occur in Alberta. The distribution of auricomis is confined to the aspen parkland region of Alberta whereas that of nevadensis is not. Nevadensis hibernates about four inches below the surface of the ground. It is not known at what depth auricomis hibernates. Other bush-inhabiting species hibernate close to the surface. Perhaps nevadensis survives on the prairie whereas auricomis does not because it digs deeper to hibernate and is therefore better protected from the cold. On the other hand, the distribution of auricomis extends further to the north than does that of nevadensis indicating perhaps that auricomis is more cold hardy. Both species tend to nest in underground locations, and both establish nests from mid-May to mid-June.

When constructing the first broods, both construct cups of pollen and, after completing four cups roughly in the form of a square, begin to lay an egg in each of them. Construction of the first brood mass takes about four days. About eight additional cups are constructed

on all sides of the original four, and a wax-pollen envelope is moulded over the mass. Pollen is added to the base and the sides of the mass through gaps in the wax-pollen envelope at either end of the mass. The queens require a month to rear sufficient workers to take care of the foraging duties of the colony.

The eggs of the second and succeeding broods of both species are laid in individual cups. This phenomenon is peculiar to species of Bombias. The cups are constructed on top of the cocoons of previous broods and are not primed with pollen.

Both species are prolific producers of the wax-pollen mixture used to make honey pots, to cover brood, and to suffuse the ceiling of the brood chamber. As the sizes of the colonies increase, more pots are constructed. Some are used for pollen storage. Honey and pollen are also stored in cocoons.

Colonies of both species are usually small, apparently because only a few broods of workers are produced before male and queen production are commenced, and because they lay only one egg per cup in the second and succeeding broods. The largest colony of either species was one of nevadensis; 139 individuals were produced in it. The workers of a brood vary greatly in size, and the workers of succeeding broods are succeedingly larger; the ones produced just prior to the production of queens are almost as large as the queens.

Males of nevadensis mate by grasping a female when it is flying copulating with it after they fall to the ground. The males of both species have big eyes which are apparently associated with this type of mating behaviour. No

sexual interest is shown by males or queens while in the nests. The queens then hibernate by digging into the soil. Nevadensis is one of the earliest species to hibernate, beginning about mid-July.

Psithyrus insularis Sm. parasitized colonies of nevadensis, and Physocephala texana (Will.) parasitized the workers and males of these species.

The Appearance of Corn Borer Larvae Attacked by Chrysopid Larvae

Narayan V. Belur

In the laboratory corn borer larvae were allowed to be attacked by chrysopid larvae (Chrysopa plorabunda Fitch) to determine the specific type of injury on the former. It was observed that the borer larvae so attacked appeared pale and collapsed. As the liquid contents of the host were removed the thorax and abdomen curled with the result that only the head region was clearly differentiated. This is in contrast to the condition of other dead larvae where the three body divisions can be easily distinguished.

The Biology of the Mountain Pine Beetle

R. W. Reid

The mountain pine beetle attacks and destroys a number of different pine species in western North America. The main flight generally occurs near mid-summer. Eggs are laid along the sides of galleries con-

structed between the inner bark and the sapwood of the tree stem. Broods most frequently overwinter in the larval stage, completing their development during the following spring and early summer. The life cycle may vary considerably within the same region in different years and in different regions during the same year, depending upon seasonal and regional weather patterns. There are a number of factors affecting survival of broods. These include resistance by the tree in the form of resin exudation, unfavorable moisture and temperature regimes beneath the bark, insect predators, parasites, and woodpeckers.

Host Selection by the Mountain Pine Beetle

R. F. Shepherd

Populations of the mountain pine beetle, Dendroctonus monticolae Hopk. usually attack lodgepole pine trees in large numbers while some surrounding trees remain unattacked. This concentration of beetles in certain trees has led to many ideas on host attraction and the possible use of this for control. Field attraction tests have indicated that beetles prefer rough-barked trees and that injured or attacked trees produce some attraction. The main attraction however is produced by the female beetle itself when it successfully attacks a tree. This attraction is probably due to a chemical odour.

Aspects of Insect Repellency

M. J. Reddy

Attempts are being made to determine which phases of insect repellents are most important in repellency, and to quantitatively evaluate these phases. That is with a liquid repellent, comparing responses to physical contact with the liquid, with responses to the vapour produced by it.

Apparatus was designed to eliminate, by suction through a porous surface, the layer of vapour above the half-treated floor of a binary choice test chamber. The insect used was Blattella germanica and the repellent was R-874. Results indicate that the vapour phase is indeed most important, and may be almost all important. The apparatus however is not sufficiently efficient at the moment and will have to be improved.

A Minute on Diplocheila minima Jedlicka (Coleoptera : Carabidae)

George E. Ball

Based on an examination of the type material, this Palaearctic species is shown to be a primitive member of the otherwise strictly Nearctic striatopunctata group of the subgenus Isorembus Jeannel. The morphological characteristics and distribution of Diplocheila minima lend support to the hypothesis that the striatopunctata group is of Old World origin.

Revision of the Genus Ips De Geer (Scolytidae : Coleoptera)

G. R. Hopping

Progress on a revision of the Scolytid genus Ips in North America was presented. All of the recognized species in North America as well as most of the world species have been examined. Contact is maintained with the principal workers on taxonomy of Scolytidae throughout the world. Publications have been issued or are in press on techniques for rearing Ips, transference of a certain group from the genus Ips to the genus Orthotomicus, description of two new species of Ips from western Canada and Alaska, and a paper defining the natural groups of Ips of North America. Breeding in the laboratory of certain species of Ips e.g. I. tridens (Mannerheim) has shown the range of variation within these species and, at least in I. tridens, the presence of two genetical types of females, one which produces only females and one which produces bi-sexual broods. The females capable of producing only females apparently must be fertilized by the males from the bi-sexual broods before the eggs will develop.

A Skin Reaction Associated with Sheep Ked Infestations

W. A. Nelson

A purulent skin eruption was described which occurs to varying degrees in sheep at about the time acquired resistance to the sheep ked sets in. Evidence as to whether the eruption is related to the keds themselves or to Trypanosoma melophagium was presented.

Sawfly Cutting in Lines of a Solid-stemmed Variety of Common Wheat, S-615, in Which Whole Pairs of Chromosomes Have Been Replaced by the Corresponding Pair from a Hollow-stemmed Variety, Apex

Ruby I. Larson and M. D. MacDonald

Solid-stemmed varieties of common wheat are more resistant than hollow-stemmed varieties to the wheat stem sawfly, Cephus cinctus Nort. The mechanisms through which the pith in solid wheat stems operates to confer resistance are unknown, but they are probably not exclusively mechanical, as pith kills eggs as well as later stages. If solid-stemmed fairly susceptible lines, and hollow-stemmed fairly resistant lines closely related to one another were to be produced, entomologists could use them to analyse some of the components of resistance.

At Lethbridge we have produced lines of the solid-stemmed variety S-615 in which individual whole pairs of chromosomes have been replaced by the corresponding pair from the hollow-stemmed variety Apex. Some of these substituted lines are less solid than S-615, but a few are more solid, and the pith distribution within the stem differs from line to line.

As common wheat has three sets of seven chromosome pairs, each set from a different ancestor, it has 21 pairs altogether. For each pair from one ancestor there are corresponding pairs from the other two ancestors that govern the same physiological processes in the plant. Wheat chromosomes are named according to both function and ancestor, the function being designated by numbers 1 to 7 and the ancestor by letters A, B, or D. Thus, chromosomes 1B, 3B, and 7B are from the same ancestor; 5A, 5B, and 5D

control the same physiclogical processes.

A preliminary test of cutting by the sawfly at Lethbridge in 1962, showed that lines of S-615 in which Apex chromosome pairs 2A, 2D, 3B, 3D, 4A, 6D, and 7B replaced the S-615 chromosomes, were cut more than S-615 was; lines 6B and 7D were cut less. The susceptible lines were less solid than S-615 but the percentage cut was not directly proportional to hollowness. Line 6B was as solid as S-615 and 7D was more solid. Line 5A was less solid than S-615, but was no more susceptible than S-615 to sawfly cutting.

These are the results of preliminary examination only. When the uncut stems have been split and examined it should be possible to tell whether the lines of S-615 with Apex chromosomal substitutions will be useful for analysis of sawfly resistance in common wheat.

Activity of Mosquitoes in a Forest

D. C. D. Happold

The activity of mosquitoes in a mature trembling aspen (Populus tremuloides) forest north of Edmonton was studied during 1961 and 1962. There were two main peaks of activity at ground level, one in the early morning and another before sunset. However, during the hours of darkness no mosquitoes were found flying at ground level. To determine if there was an upward migration in the forest at night, a tower was built so sampling could be made at different levels. It was found that only 2.8% of all mosquitoes caught in these stratification samples were flying above 20 ft; that is, the mosquitoes in the forest remain close to the ground at all

hours. Activity cycles for five species of mosquitoes were discussed. Although they were similar to the total population cycle, peaks occurred at different hours. A comparison was drawn between the activity cycles of mosquitoes in temperate climates and in tropical forests.

Measurements of Food Consumption and Utilization in Insects

A. J. McGinnis and R. Kasting

An indirect method using Cr_2O_3 in the diet was compared with the direct gravimetric method of determining dry matter utilization in two species of insects. With the pale western cutworm the two methods failed to agree but with the two-striped grasshopper agreement was excellent. The general usefulness of the method was discussed and the possibility of using radioactive isotopes was considered.

The Predatory Strike of *Aeshna eremita* (Odonata : Anisoptera)

Gordon Pritchard

Details of the strike are being examined by motion picture techniques. Analysis of data from 36 strikes by 8 larvae has shown that there is much variation in the timing of the various parts of the strike. The strike may be released when the prey is from 2.5 - 9 mm. (mean: 4.8 ± 1.5) away, and the labium is extended from 5 - 9 mm. (mean: 6.4 ± 1.4). The labium is usually extended further than the distance of the prey but there is no correlation between these two distances.

The strike may be divided into four stages - opening of the labial palps, forward thrust of the labium, closing of the palps, and retraction of the labium. The average times for these stages are - palpal opening 80 milliseconds, forward thrust and closing of palps 15 - 20 milliseconds, and labial retraction 142 milliseconds.

The anus closes at the time of the strike and this would seem to be an aid to the hydraulic mechanism of labial extension, ensuring that all pressure is directed forward and is not used to expel water from the colon.

Insect Spiracles and Water Loss Under Reduced Pressure

J. Sharplin

The abdominal spiracles of Tribolium confusum are situated in the pleural membrane. The opener muscle inserts on the abdominal tergum. When the insect is subjected to very low pressure the abdomen is distended and the pleural membrane is stretched. The spiracles are probably held open mechanically under these conditions because of the stretching of the opener muscle. This could account for the high rate of water loss in Tribolium at low pressures as compared with other insects whose spiracles are not arranged in this way.

An Insect-Destroying Fungus

A. B. Ewen

A fungus of the genus Entomophthora (Family Entomophthoraceae) was found infecting specimens of the alfalfa plant bug, Adelphocoris lineolatus (Goeze) (Hemiptera : Miridae). Only female insects in the fifth instar and adult stages seem to be infected. Budding and growth of the fungus is very rapid after infection and eventually results in the destruction of the entire internal tissues of the abdomen, leaving only the more heavily chitinized exoskeleton surrounding a more or less compact mass of hyphal bodies. Just before the death of the host, the hyphal bodies near the periphery germinate and the conidiophores that they form force their way to the exterior where they form and discharge the conidia. The conidia are air-borne and can infect another host. The sexual cycle of the fungus has not been fully examined.

One effect of the infection in the adult female insect is what amounts to a biological castration. This results in a marked hypertrophy by the corpus allatum, brought about, presumably, by the removal of the ovarian hormone(s) which, in normal insects, shut down the gonadotropic action of the corpus allatum in later stages of the reproductive cycle.

Some Temperature Reactions of *Melanophila*

W. G. Evans

The presence of large numbers of *Melanophila* near forest fires, oil fires, cement plants and burning dumps could be a function of temperature responses of this insect. Because *Melanophila* is a long-range flyer these sites could act as traps due to the utilization of temperature as a token stimulus by this insect.

Serious Business

N. Van Veen H. Cerezke R. Shepherd R. Salt N. Belur A. McGinnis

N. Van Veen ? Luncheon N. Holmes H. Seamans W. Haufe R. Reid

A. Ewen C. Lilly ? G. Pritchard M. Khan R. Hartland - Rowe

G. Ball W. Nelson C. Lilly D. Happeld R. Freitag M. Hopkins

G. Burgess C. Brown F. Fredeen A. Arnason R. Freitag W. Haufe
J. Shemanchuk

R. Larson J. Sharplin R. Freitag
E. Gushul

TENTH ANNUAL MEETING - CALGARY - 1962

More serious business		R. Robertson	G. Hopping	G. Evans
Inspecting collection	Inspecting collection		G. Gushul	R. Larson
	J. Shorthouse K. Richardson D. Larson	J. Legge	M. Reddy	G. Hobbs
J. Gurba J. Edmunds	Banquet		Banquet	
R. Larson	Banquet		Banquet	
Head table	H. Seamans		Head table	
Oil Capital of Canada	Banquet		Convocation	

ENTOMOLOGICAL SOCIETY OF ALBERTA

MINUTES OF EXECUTIVE MEETING, APRIL 14, 1962

An executive meeting was held in the Forest Entomology and Pathology Building, Calgary, Alberta, on Saturday, April 14, 1962.

Present were: N. Van Veen, R. F. Shepherd, A. J. McGinnis, R.C.B. Hartland-Rowe, R. W. Reid, and W. C. McGuffin.

1. Annual meeting

Tentatively set for November 16 and 17 (to coincide with football game if convenient). Suggested local arrangements committee:
Prof. Hartland-Rowe, * C. E. Brown and H. Cerezke.

Suggested program committee:
G. R. Hopping, Dr. A. J. McGinnis, R. Madge.

(Mr. Hopping did not wish to chair this committee; Mr. C. E. Brown assumed this position and gave up his place on the local arrangements committee).

The program committee to be responsible for notifying the members of the date of the meeting and making arrangements for the program and displays.

The secretary agreed to find out if the people named to these committees would act on these committees.

Speakers: Senator Cameron
President Taylor

Place: Ft. Calgary House
University of Alberta (Calgary)

Financing: Local arrangements committee to meet with treasurer to determine requirements before end of September. Soliciting of interested groups to be arranged if necessary.

2. Collecting Competition

Closing date: October 31
Notices to: Teachers Magazine
Woodsmoke (Canadian Girl Guide Publication)
4-H groups
A. Deschamps, Dept. of Extension, University of Alberta Edmonton
Mrs. Jones, Correspondence Branch, Alberta Dept. of Education, Edmonton.

Contact Committee: G. Hobbs
C. E. Brown
G. Ball

3. Entomological Society of Alberta prize.

The secretary agreed to write to Prof. Hocking to determing what has been done about this prize.

4. Honorary degree for Mr. Seamans

The executive decided it could take no action at the present time. The former secretary, Miss Shore, wrote to Dr. Johns, the president of the University on February 15, 1962, but up to the time of this meeting there had been no reply.

5. Historical Committee

Dr. Reid, as editor, said he would write to Dr. Hocking about the duties of this committee.

6. Nominations Committee

A committee was named to draw up a list of nominations for officers at the next annual meeting. The members are: Dr. R. Salt, Chairman
Lethbridge
Mr. R. Stevenson,
Calgary
Dr. B. Hocking, Edmonton

7. Butterflies of Alberta

The chairman promised to secure estimates on costs of printing such a publication and report back to the annual meeting.

8. Nomination of Mr. G. R. Hopping for president-elect of the Entomological Society of Canada 1962-63. Dr. Shepherd discussed this and those present agreed to support this nomination if Mr. Hopping would let his name stand.

Signed: W. C. McGuffin
Secretary

N. W. Van Veen
President

MINUTES OF EXECUTIVE MEETING
November 8, 1962

An executive meeting was held at 102 - 11th Avenue East, Calgary, November 8, 1962.

Present were: N. W. van Veen, R. F. Shepherd, A. J. McGinnis, R. W. Reid, N. Holmes, R.C.B. Hartland-Rowe, J. Edmonds, G. Pritchard, H. F. Cerezke.

1. Transfer of secretarial duties:

All executive members present signified their approval of the transfer of secretarial duties to H. Cerezke by W. C. McGuffin, who has been transferred to Ottawa.

2. Zoological Record Fund:

It was moved by R. F. Shepherd and seconded by R. Hartland-Rowe that $10.00 be sent to the Zoological Record for 1962.

3. Resolutions Committee:

It was moved by N. Holmes and seconded by N. van Veen that the following people be asked at the Annual Meeting to serve on the Resolutions Committee:
P. E. Blakeley
W. G. Evans
L. A. Jacobson

4. Judging Committee, Insect Collection Competition:

R. F. Shepherd moved and A. J. McGinnis seconded that the following people serve on the Judging Committee of the Insect Collection Competition:
G. A. Hobbs
G. E. Ball
R. Hartland-Rowe

5. Auditors:

It was moved by R. W. Reid and N. van Veen and seconded by N. Holmes that the following people serve as auditors:
G. R. Hopping
C. E. Brown

6. Announcements:

(a) It was announced that two minutes of silence be observed at the Annual Meeting in memory of former members; Prof. Strickland and A. Brooks.

(b) A get-well card was to be purchased and signed by all members at the Annual Meeting, and sent to Dr. C. W. Farstad who is suffering from recent heart attacks.

7. Historical Committee:

The duties as well as the persons responsible on this committee were not clearly defined in previous minutes. From the discussion that followed, it was reviewed that the records of the Society be kept in the Entomology Department in Edmonton, that the library of the Society be retained at the Forest Entomology and Pathology Branch in Calgary, and that the Historical Committee be responsible for deciding what records to be kept and what to be discarded.

The following motion was presented by A. J. McGinnis and was seconded by R. W. Reid:
"All records of the Society be retained for 10 years and that with each subsequent year, one years records be screened by the Historical Committee. This committee would be comprised of the current president and secretary, and by the Head of the Entomology Department, Edmonton".

8. Centennial of Entomology in Canada:

A letter received from the Chairman of the Finance Committee for the Centennial of Entomology in Canada was read. In essence it asked for a contribution of $150.00 from our Society. The treasurer pointed out that there was insufficient money held in balance by our Society to cover this amount. After some discussion A. J. McGinnis put forward the motion which was seconded by R. Hartland-Rowe:
"A $1.00 special assessment come from each of the regular members for one year only (1963), and that the balance of the required $150.00 be taken out of the general fund".
There are about 60 regular members currently in the Society.

9. It was moved by N. van Veen and seconded by R. F. Shepherd that the meeting adjourn.

Signed: H. F. Cerezke
Secretary

N. W. van Veen
President

MINUTES OF THE TENTH ANNUAL MEETING
Saint Cyprian's Church Hall, 2828 19th Street N. W., Calgary
November 9, 1962

The meeting was opened by the President N. W. van Veen, who gave a special note of welcome to Drs. Seamans and Arnason.

1. The secretary asked if anyone wished to have the minutes of the previous annual meeting read. No one indicated that they be read. P. Blakeley moved and G. Evans seconded that the minutes be adopted as published in the 1961 Proceedings. CARRIED

2. A letter received from Dr. G. Ball concerning the "Insect Collectors Guide" was reviewed by the secretary. Dr. Ball, as chairman of a committee to revise this booklet, asked that he be relieved from these duties, owing to a lack of time and interest. He had stated, however, that he felt that this work was still worthwhile. No further comments were added to this topic.

3. A thank you letter from M. Reddy, graduate student in entomology and recipient of the Entomological Society Prize of $50.00 for 1962, was read.

4. The secretary read a letter from the Zoological Society of London which asked for our annual donation of $10.00 toward the Zoological Record Fund. It was mentioned that at a previous meeting the executive had agreed to make this contribution for 1962.

5. The secretary read a letter from the Chairman of the Finance Committee for the Centennial of Entomology in Canada. This letter asked for a contribution of $150.00 from our society to support the financial needs of the Centennial Meeting of 1963. This topic was set aside for further discussion under "new business".

6. Treasurers report:

   This was an interim report up to date at November 1, 1962.

   Balance - $340.62

   Membership - 60 regular members
   - 10 student members

7. Report from the Regional Director to the Canadian Entomological Society.

   The following topics were reported on by R. Salt:

(a) Supplements of the "Canadian Entomologist"

R. Salt pointed out that while the Supplements were often voluminous publications they were a definite source of profit. The present editor of the Canadian Entomologist has suggested that the "Supplements" be more fittingly renamed "Memoirs".

(b) Award for ourstanding entomological work in Canada.

R. Salt stated that an insignia had been adopted for an award to be given to Canadian entomologists whose contributions are recognized as outstanding. R. F. Morris was stated to be the first of such persons to receive this award for his work on the spruce budworm.

(c) Meeting of the Centennial of Entomology in Canada.

A special stamp commemorating 100 years of entomology in Canada existed so far in the suggestion stage.
As special guest for the Centennial meeting, R. Salt stated that it was not known whether the Duke of Edinburgh would be able to come. His expenses would be paid by the Can. Entomology Society. For the scientific program 20 papers are scheduled and all will be on an invitational basis to maintain a high scientific level. All papers would be given by Canadians.
One major symposium is scheduled and will deal with wide aspects of economic entomology in Canada. A second symposium has been suggested.
Scientific displays demonstrating actual entomological research are scheduled and are also to be on an invitational basis.
Material for historical displays will also be called upon and will include photographs, poems, documents, rare books, etc.

R. Salt also listed the following localities for future meetings of the Canadian Entomological Society:

October, 1963 - Carleton University, Ottawa;
1964 - Vancouver; 1965 - Acadian; 1966 - Central Canada
1967 - Edmonton or 1968 - Calgary.

8. The president asked that a two minute silence be observed for the late Professor E. H. Strickland and A. Brooks. Professor Strickland was an Honorary Life Member of the society while A. Brooks was a former member. Both men had contributed substantially to entomology in Canada.

9. Greetings from the Entomological Society of Saskatchewan.

Greetings from the Ent. Soc. of Sask. were given by Mr. F. J. H. Fredeen. He announced that the Saskatchewan Society would be holding its Annual meeting on December 6 and 7 and extended a welcome to any of the Alberta Society members. He further stated that their society had been asked for $100.00 as a contribution toward the Centennial of Entomology in Canada Meeting. The Saskatchewan Society presently has a membership of 35.

10. A get-well card for Dr. Farstad was circulated during the morning business meeting for signatures of all members present. Dr. Farstad is recovering in the Civic Hospital in Ottawa from recent heart attacks.

11. Committees for this meeting.

The committees nominated by the executive at their meeting were read out and the members nominated to these committees signified their acceptance of positions. The committees appointed were Resolutions Committee, Insect Collection Competition Judging Committee, and Auditors.

12. Historical Committee.

The president introduced this item and mentioned the discussion and motion that took place at an executive meeting.
Gushel suggested that considerable space of storage could be conserved if the Alberta Ent. Soc. records could be put on microfilm. However, due to the time, work, and expense involved, R. Reid motioned that "for the time being we leave the records for the Historical Committee as they are". C. Lilly seconded this motion.
CARRIED

13. Report of Nominations Committee.

This report will be presented tomorrow.

14. Report on "Butterflies of Alberta".

Mr. van Veen gave the report of his proposed book and stated that a co-partner, Mr. R. Anderson, had withdrawn.
For financial assistance van Veen pointed out that several agencies had been approached including oil companies and the Glenbow Foundation--no money was available from these. A Calgary firm gave their estimate of $120.00 per plate, making a total of $2000 - $3000 for

the required 20-30 colored plates. Two German firms were contacted for estimates but no word had been received from them to date. Mr. van Veen also stated that some financial backing may come from the Provincial Government since the undertaking of this book would be similar to "Birds of Alberta".

Mr. van Veen added that this book would be a useful asset for school children as well as amateur collectors. He commended Mr. Legge, an amateur Lepidopterist for his collection of rare specimens from the Yukon and from northern and western regions of Alberta. Mr. Legge also has slide preparations of genitalia from specimens collected in the foothills of Alberta. Van Veen noted that Mr. Legge's work should also be included in the proposed "Butterflies of Alberta".

NEW BUSINESS

15. Contribution toward the Meeting of the Centennial of Entomology in Canada.

R. Shepherd reviewed the motion that was presented at the executive meeting. He stated that it was suggested a $1.00 special assessment be added to the fees for 1963 only and that the remainder of the required $150.00 be supplied from general funds. This topic was then set aside for the business meeting on Saturday.

16. A. Brooks Memorial Fund.

A. Ewen announced that the present Entomological Society of Saskatchewan Prize had been renamed in honor of A. Brooks. He stated that the Prize Committee from Saskatchewan had asked him to approach our society members for opinions on the setting up of a more substantial prize in honor of A. Brooks. He suggested that the Manitoba Society could also be asked to participate, thus making available an annual prize of considerable size to entomology students in the three Prairie Provinces. Opinions on this topic will be called for at the business meeting on the following day.

The meeting was moved adjourned (recessed) until 11:15 a.m. November 10 by N. W. van Veen.

Signed: H. F. Cerezke
Secretary

N. W. van Veen
President

November 10, 1962

The second section of the business meeting was opened by the President.

1. Insect Collection Competition.

The President gave a few words of praise for this year's insect collections and then called upon the Judging Committee to give their report. Dr. G. Hobbs read out the winners as follows:

(a) General Collection (only one entered) - first prize won by Ken Richards (Lethbridge).

(b) Challenge Competition (two entries) - called a draw with two winners, David Larson and Joseph Shorthouse (both of Lethbridge).

For the Challenge Competition of 1963 G. E. Ball made the motion, "that aquatic insects be the theme". This was seconded by G. Hobbs.
CARRIED

2. Raising of dues for the Centennial Meeting.

During the discussion that followed the following comments were made: L. Jacobsen - "We should not interfere with our dues since this might interfere with the by-laws of the society". It was then pointed out that all the money goes into a general fund. G. Evans then put forward the motion "we assess all members $1.00 in 1963". R. Salt seconded
CARRIED

Mr. C. Brown pointed out that the society had not as yet presented a motion confirming our donation of $150.00 toward the Centennial Meeting. He then moved that "we give the Finance Committee of the Centennial of Entomology in Canada $150.00 to use in which ever way they see fit". This was seconded by A. J. McGinnis. CARRIED

3. Brooks Memorial Fund.

Dr. Ewen asked for further comments on this topic and suggested the possibility of the setting up of a prize in memory of A. Brooks that would be separate from the existing prizes now offered by the two societies. It was then pointed out that the establishment of a third prize might interfere with the already proposed "Strickland Memorial Fund", since the latter would be contributed by alumni from Alberta, many of whom are now Alberta or Saskatchewan society members. G. Evans noted that "we should consider such a proposal as suggested by A. Ewen". Mrs. Hopkins suggested that a committee be established to look into the matter more deeply.

P. Blakeley added further comments on the subject. He stated that he thought memorial funds were wrong; he asked the question "who decides who is to be honored by a memorial fund?" Opinion is likely to vary in different localities and P. Blakeley suggested that a plaque or book might be more appropriate. G. Ball added that this would be a good point for the new executive to consider for the regulation of the setting up of any future funds.

J. Gurba then suggested that the matter be left up to the new executive. This suggestion was presented as a motion by N. van Veen and seconded by G. Ball. CARRIED

"That we leave all decisions on 'new' Prizes or Memorial Funds in the hands of the new executive".

4. Nominations Committee report.

The following executive for the coming year was presented by Dr. R. Salt. Mr. N. van Veen moved that the slate be adopted; seconded by Dr. G. Ball. CARRIED

President	-	N. D. Holmes (Lethbridge)
Vice-President	-	W. G. Evans (Edmonton)
Secretary	-	C. E. Lilly (Lethbridge)
Treasurer	-	W. A. Nelson (Lethbridge)
Editor-Librarian	-	P. E. Blakeley (Lethbridge)
Directors	-	J. B. Gurba (Edmonton)
	-	A. M. Harper (Lethbridge)
	-	H. F. Cerezke (Calgary)

5. Resolutions Committee report.

WHEREAS the local arrangements committees have done an excellent job in organizing the program, accommodation for the meetings, the luncheon and the banquet and have carried out the many other tasks required to make this meeting a success,

THEREFORE BE IT RESOLVED that a very hearty vote of thanks be tendered to the members of these committees and to the rector of St. Cyprian's Church, the Rev. G. C. Dickin,

WHEREAS Mr. Evan Gushel has contributed greatly to the success of this and past meetings with the many fine colored slides he has shown and,

WHEREAS he has also contributed and processed the many photographs that have appeared in the "Proceedings" since 1956,

THEREFORE BE IT RESOLVED that a sincere vote of appreciation be extended to him.

The report of the Resolutions Committee was read by P. Blakeley who also moved that it be adopted as read. C. Lilley seconded. CARRIED

6. The President announced the four publications that had been received for our library. These were listed earlier at an executive meeting.

7. Payment of expenses of Mr. Seamans

After some discussion the following motion was put forward by N. Holmes; seconded by G. Ball. CARRIED

"That the society pay for the living expenses of Mr. and Mrs. Seamans during their stay in Calgary".

Following this motion it was pointed out that this motion might be a duplication of an earlier resolution passed at the Sixth Annual Meeting, October 18, 1958, which states:

"(4) Any costs, up to a limit of $100.00 --------be defrayed by the Alberta Entomological Society".

Dr. Ball pointed out that a previous motion passed in 1958 concerned the payment of the hood for Mr. Seamans for Convocation by our Society. However, this motion could not be found in previous minutes. At the Sixth Annual Meeting it was stated "that hood, cap and gown may be purchased and presented to the recipient, but that the University has hoods, caps and gowns which they lend for the ceremony".

8. The President announced that Mr. Art Rupp, an amateur Lepidopterist, had arrived from Edmonton to attend the meeting.

9. More help for amateurs.

The subject of providing more service to amateur entomologists was introduced by Mr. C. Brown who suggested a "Directory of Amateurs" be prepared. He presented this in the form of a motion, seconded by J. Edmonds. CARRIED

"That the society take the initiative to prepare a directory for all amateur entomologists and have it circulated to them".

Mr. J. Edmonds made the suggestion that the scope of the directory be expanded to include the field of interest of each amateur and to include amateurs from all of Alberta and possibly other provinces.

Mr.N. van Veen then asked the question, "on what basis is an amateur chosen"? It was decided that anyone who was actively interested in entomology but whose daily work was not entomology, would be an amateur.

Mr. J. Edmonds suggested that a committee with representatives from Edmonton, Calgary and Lethbridge be set up to prepare this directory. This was followed by a motion by N. van Veen and seconded by J. Edmonds. CARRIED

"That we refer this topic to the new executive".

This motion was followed by a suggestion of Mr. J. Gurba:
"The society should set aside something of interest for amateurs".

10. Dr. G. Ball extended a vote of thanks to the outgoing executive.

The meeting was moved adjourned by Mr. A. M. Harper.

Signed: H. F. Cerezke
Secretary

N. W. van Veen
President

FINAL STATEMENT OF FINANCES
YEAR ENDING DECEMBER 31, 1962

Receipts

Bank Balance Jan. 1, 1961			405.49	
Membership Fees				
Ent. Soc. Canada	1961	00.00		
	1962	132.00		
	1963	16.00		
			148.00	
Ent. Soc. Alberta	1961	2.00		
	1962	67.15		
	1963	9.15		
			78.30	
Annual Meeting				
Registration		222.00		
Banquet Guests		36.00		
Coffee Sale		12.85	270.85	
				902.64

Disbursements

Ent. Soc. Canada		148.00	
Ent. Soc. Alberta		50.00	
Contribution, Zoological Record		10.15	
Cost of Proceedings		59.57	
Lodging and meals, H. L. Seamans		25.35	
Stamps		7.92	
Bank Charges		.45	
Annual Meeting			
Hall, Luncheon, Coffee	94.75		
Banquet	175.20	269.95	
			571.39
Balance			331.25

Audited Jan. 21, 1962

G. R. Hopping

C. E. Brown

R. F. Shepherd
Treasurer

MAILING LIST, 1962-63

Members

Blakeley, Mr. P. E.	Research Station, Canada Agriculture, Lethbridge.
Broadfoot, Dr. W. C.	Research Station, Canada Agriculture, Lethbridge.
Brown, Mr. C. E.	Forest Ent. & Path. Lab, 102 - 11th Ave. S. E., Calgary.
Carr, Mr. J. L.	R. R. 4, Calgary.
Cerezke, H. F.	Forest Ent. & Path. Lab.,102 - 11th Ave. S. E., Calgary.
Church, Dr. N. S.	Research Station, Canada Agriculture, Lethbridge.
Cook, Mr. A. J.	Forest Ent. & Path. Lab, 102 - 11th Ave. S. E., Calgary.
Davidson, Mr. C.	11305 University Avenue, Edmonton.
Depner, Mr. K. R.	Research Station, Canada Agriculture, Lethbridge.
Elliott, Mr. D. P.	Forest Ent. & Path. Lab, 102 - 11th Ave. S. E., Calgary.
Evans, Dr. W. G.	Department of Entomology, University of Alberta, Edmonton.
Ewen, Dr. A. B.	Research Station, Canada Agriculture, University Sub-Post Office, Saskatoon.
Fredeen, Mr. F. J. H.	Research Station, Canada Agriculture, University Sub-Post Office, Saskatoon.
Freitag , Mr. R.	Department of Entomology, University of Alberta, Edmonton.

Gushul, Mr. E. T.	Research Station, Canada Agriculture, Lethbridge.
Happold, Mr. D. C. D.	Department of Entomology, University of Alberta, Edmonton.
Harper, Dr. A. M.	Research Station, Canada Agriculture, Lethbridge.
Hartland-Rowe, Dr. R. C. B.	Department of Zoology, University of Alberta at Calgary, Calgary.
Haufe, Dr. W. O.	Research Station, Canada Agriculture, Lethbridge.
Hewitt, Mr. A. G.	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, Calgary.
Hopping, Mr. G. R.	Forest Ent. & Path. Lab. 102 - 11th Avenue S. E., Calgary.
Jacobson, Mr. L. A.	Research Station, Canada Agriculture, Lethbridge.
Khan, Mr. A. A.	Department of Entomology, University of Alberta, Edmonton.
Kloppenborg, Mr. N. E.	Research Station, Canada Agriculture, Lethbridge.
Knight, Mr. D.	Box 997, Vegreville, Alberta.
Larson, Dr. Ruby I.	Research Station, Canada Agriculture, Lethbridge.
Lilly, Mr. C. E.	Research Station, Canada Agriculture, Lethbridge.

Lindsay, Mr. I. S.	Environmental Protection, Defence Research Board Headquarters, Ottawa.
MacDonald, Dr. M. D.	Research Station, Canada Agriculture, Lethbridge.
McDonald, Mr. S.	Research Station, Canada Agriculture, Lethbridge.
McGinnis, Dr. A. J.	Research Station, Canada Agriculture, Lethbridge.
McGuffin, Dr. W. C.	3rd Floor K. W. Neatby Building, Ottawa.
Madge, Mr. R.	Department of Entomology, University of Alberta, Edmonton.
Murdoch, Miss Rita	Department of Entomology, University of Alberta, Edmonton.
Nelson, Dr. W. A.	Research Station, Canada Agriculture, Lethbridge.
Newgard, Mr. B.	627 North Avenue East, Missoula, Montana.
Nummi, Mr. W. O.	Research Station, Canada Agriculture, Lethbridge.
Painter, Mr. R. H.	Livestock Insect Liaison Officer, c/o Research Station, Canada Agriculture, Lethbridge.
Pankiw, Mr. P.	Experimental Farm, Beaverlodge, Alta.
Pelham, Mr. W. L.	Research Station, Canada Agriculture, Lethbridge.
Peterson, Mr. L. K.	Research Station, Canada Agriculture, Lethbridge.
Sharplin, Dr. Janet	Department of Entomology, University of Alberta, Edmonton.
Pritchard, Mr. G.	Department of Entomology, University of Alberta, Edmonton.

Proctor, J.	Department of Crop Protection and Pest Control, Field Crops Branch, Alberta Department of Agriculture, Edmonton.
Pucat, Miss A.	Department of Entomology, University of Alberta, Edmonton.
Reddy, Mr. M. J.	Department of Entomology, University of Alberta, Edmonton.
Reid, Dr. R. W.	Forest Ent. & Path. Lab., 102 - 11th Avenue S. E., Calgary.
Robertson, Mr. R. H.	Research Station, Canada Agriculture, Lethbridge.
Salt, Dr. R. W.	Research Station, Canada Agriculture, Lethbridge.
Shemanchuk, Mr. J. A.	Research Station, Canada Agriculture, Lethbridge.
Shepherd, Dr. R. F.	Forest Ent. & Path. Lab., 102 - 11th Avenue S. E., Calgary.
Shore, Miss Joan C.	Department of Entomology, University of Alberta, Edmonton.
Smith, Dr. D. S.	Research Station, Canada Agriculture, Lethbridge.
Stevenson, Mr. R. E.	Forest Ent. & Path. Lab., 102 - 11th Avenue S. E., Calgary.
Story, Mr. T. P.	Research Station, Canada Agriculture, Lethbridge.
Swailes, Dr. G. E.	Research Station, Canada Agriculture, Lethbridge.
Swindlehurst, Mr. E. B. S.	Research Information Editor, Alberta Department of Agriculture, Edmonton.
Van Veen, Mr. N. W.	932 - 5th Avenue N. E., Calgary.
Weintraub, Mr. J.	Research Station, Canada Agriculture, Lethbridge.

New Members

Barron, J. R.	Department of Entomology, University of Alberta, Edmonton.
Belur, N. V.	Department of Entomology, University of Alberta, Edmonton.
Johnson, P. C.	Division of Forest Insect Research, Federal Building, Missoula, Montana.
Mackenzie, A. I. W.	1206 - 31st Ave. N. W., Calgary.
Nur, Osman	Department of Entomology, University of Alberta, Edmonton.
Wu, Lan-Lin	Department of Entomology, University of Alberta, Edmonton.

Honorary Life Members

Seamans, H. L.	581 Fraser Avenue, McKellar Park, Ottawa.
White, R. M.	R. R. 1, West Summerland, B. C.

Affiliated Societies

Entomological Society of Canada (Mr. L. L. Reed, Secretary)	Plant Protection Division, Production and Marketing Branch, K. W. Neatby Building, Carling Avenue, Ottawa
Entomological Society of British Columbia (Mr. P. Zuk, Secretary)	6660 Northwest Marine Drive, Vancouver 8, B. C.
Entomological Society of Saskatchewan (Dr. J. F. Doane, Secretary)	Research Station, Canada Agriculture, University Sub-Post Office, Saskatoon.
Entomological Society of Manitoba (Mr. H. P. Richardson, Secretary)	Research Station, Canada Agriculture, P. O. Box 6200, Winnipeg.
Entomological Society of Ontario (Dr. C. C. Steward, Secretary)	Entomological Laboratory, Canada Agriculture, Box 248, Guelph. Quebec, P. Q.

Entomological Society of Quebec (Mr. P. Morisset, Secretary)

Information and Research Service, Department of Agriculture, Quebec, P. Q.

Acadian Entomological Society (Dr. L. S. Thompson, Secretary)

Research Branch, Canada Agriculture, Charlottetown, P.E.I.

Libraries

Regional Reference Library

Research Station, Lethbridge.