

PROCEEDINGS OF THE 37TH ANNUAL MEETING OF THE



Entomological Society of Alberta

ATHABASCA UNIVERSITY, ATHABASCA, ALBERTA. SEPTEMBER 21-23, 1989

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THE ENTOMOLOGICAL SOCIETY OF ALBERTA

The Entomological Society of Alberta was organized November 27, 1952, at a meeting held in Lethbridge, Alberta, as an affiliate of the Entomological Society of Canada, a certificate of incorporation was obtained under the Societies Act of Alberta on February 19, 1953.

The membership of about 70 paid-up members at that time consisted mainly of Dominion (Federal) entomologists at the Science Service Laboratories in Lethbridge (now Canada Agriculture Research Station), Suffield Research Station, Forest Zoology Laboratory in Calgary, and students and staff from the University of Alberta.

One of the prime motives for establishing the Society was to encourage interest in amateur entomology, which had declined from its earlier vigor. The objectives of the Society are succinctly stated in the original Constitution, which differs only slightly from the present day Bylaws:

"The object of the Society shall be to foster the advancement, exchange and dissemination of the knowledge of insects in relation to their importance in agriculture, forestry, public health, and industry and, for its own sake, among the people of the Province of Alberta."

OFFICERS-1988

President	C. R. Hergert
Vice-President.....	G. Pritchard
Past President.....	B. K. Mitchell
Secretary.....	J. H. Acorn
Treasurer.....	G. J. Hilchie
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Regional Director to the Entomological Society of Canada.....	J. R. Spence
Representative to the Environment Council of Alberta	J. A. Shemanchuk

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### OFFICERS-1989

|                                                                |                                                                |
|----------------------------------------------------------------|----------------------------------------------------------------|
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| Past President.....                                            | C. Hergert                                                     |
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| Regional Director to the Entomological Society of Canada ..... | J. R. Spence                                                   |
| Representative to the Environment Council of Alberta .....     | J. A. Shemanchuk                                               |

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Membership is open to anyone interested in Entomology. Annual dues are \$10.00. (\$5.00 for students). Contact the Treasurer, C/O Department of Entomology, University of Alberta.

## Program of the 37<sup>th</sup> Annual Meeting

### Thursday, September 21

- |             |                                                      |
|-------------|------------------------------------------------------|
| 1500 - 1700 | Executive Meeting. Holmberg Residence, Baptiste Lake |
| 1700 - 1900 | Dinner for Executive and Program Committees          |
| 1900 - 2400 | Reception for general membership and registration    |

### Friday, September 22

- |             |                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0830 - 0900 | Registration; refreshments. Athabasca University                                                                                                                                                   |
| 0900 - 0930 | Announcements and President's Report: C. R. Hergert,<br>Past President of the Entomological Society of Alberta.<br>Governing Council Chambers                                                      |
| 0930 - 1015 | Keynote Address. Donald H. Feener, University of<br>California at Los Angeles                                                                                                                      |
| 1045 - 1130 | Submitted Papers. Council Chambers                                                                                                                                                                 |
| 1130 - 1140 | Welcoming Address: Terry Morrison, President of Athabasca<br>University. University House                                                                                                          |
| 1140 - 1330 | Lunch at University House                                                                                                                                                                          |
| 1330 - 1645 | Submitted Papers. Council Chambers                                                                                                                                                                 |
| 1830 - 2000 | Banquet: University Cafeteria                                                                                                                                                                      |
| 2000 - 2100 | After Dinner Speaker: Terry Thormin, Provincial Museum,<br>Edmonton. "Insect Collecting in tropical America:<br>It's a bugger of a way to make a living".<br>Council Chambers (Open to the Public) |

### Saturday, September 23

- |             |                                        |
|-------------|----------------------------------------|
| 0830 - 1030 | Submitted Papers. Council Chambers     |
| 1030 - 1130 | Final Business Meeting                 |
| 1300 - 1430 | Tour of the Meanook Biological Station |

## President's Report

1989

The Society's activities this year have consisted of work on the organization of the 1990 Joint Meeting with the Entomological Society of Canada and, of course, the organization of this meeting. Preparations for the Joint Meeting are proceeding well. The Joint-Meeting Committee consists of myself (Chairman), Ron Gooding (Scientific Program Chairman), Rick Butts (Social Program Chairman), Bert Finnamore (Finance Committee Chairman), Pat Scholefield (Local Arrangements Chairman), Colin Hergert (Publicity Chairman), and Burt Schaber (ESA President - 1990). All subcommittees are on or ahead of schedule, and I am sure that we can look forward to another excellent Banff Meeting. Because of a booking problem at the Banff Centre, the meeting will be somewhat shorter than usual and will start on Sunday afternoon with the welcoming addresses, presentation of the ESC's medals and the Gold Medal address, and the welcoming reception will be held in the evening. On Monday morning we shall have the plenary symposium, which will be on "Systematics in support of Entomology", and will be organized by George Ball and Hugh Danks; an evening barbecue will follow. Monday and Tuesday will feature sessions of submitted papers, followed on Tuesday evening by the Heritage Lecture to be given by John Carr on the contributions to Alberta amateur entomology made by his father. The Banquet will round off Tuesday. Wednesday morning will have more submitted papers, special interest groups, and workshops, and the meeting will formally end at noon. If anyone has any questions or comments on the Joint Meeting, please direct them to members of the Organizing Committee.

While I am somewhat involved in the Joint Meeting Organization, I had absolutely nothing to do with the Athabasca meeting except to decide on some dates when I would not be able to attend. Unfortunately, I shall be wandering around the Alhambra or lying on the beach at Malaga, while Colin is reading this. But, I can assure you that I shall be thinking of you! Actually, I am sorry that I shall miss this, the third of a sequence of meetings away from the main centres of population. Entomological Society of Alberta Meetings are always fun, but there is that something extra when they are held off the beaten track. Let me take this opportunity to thank Robert Holmberg and the crew at the University of Alberta for organizing the Athabasca Meeting, Colin Hergert for filling in for me in the President's chair, and especially to John Acorn and Gerry Hilchie, our able Secretary and Treasurer respectively, for keeping the Society going in the almost complete absence of any guidance from above.

Enjoy the meeting, and I hope to see most of you in Banff.

Gordon Pritchard

## INVITED ADDRESS:

### Ant-Decapitating Flies and Headless Hosts

Donald H. Feener Jr.

Laboratory of Biomedical & Environmental Sciences

University of California

LOS ANGELES

California 90024

Many species of ants are attacked by parasitoids in the dipteran family Phoridae. Using several case studies, I show that behavioural interactions with these parasitoids can have important ecological and evolutionary consequences for hosts. I conclude by noting that these parasites are not only interesting in their own right, but may also serve as useful tools for dissecting the social behaviour of their hosts.

Several features of the behaviour and ecology of parasitic phorids make it likely that these parasites will affect the ecology and evolution of their hosts. Most species are parasitoids on adult ants and are frequently host-specific and caste-specific as well. Parasites are more likely to discover strong recruitment trails of hosts and, as a result, the intensity of parasitism may vary with resource size, colony size, and competitive ability. Finally, the activity of parasites is temporally restricted relative to hosts. In some cases, temporal changes in the ecology of host species are the direct result of temporal changes in the activity of parasites.

Ants use a variety of evasive behaviours to defend themselves against parasitism from phorid flies. These behaviours frequently interfere with the normal division of labour within colonies and can result in reduced foraging efficiency and/or competitive ability. In other cases, parasitic phorids have exerted evolutionary forces that have permanently altered the division of labour within colonies. The conflicting strategies used by ant colonies to defend themselves against parasitic phorids on the one hand and interspecific competitors and predators on the other, may be exploited experimentally to examine how colonies resolve conflicting contingencies.

## ABSTRACTS OF SUBMITTED PAPERS

### AN ELECTROPHORETIC AND HABITAT SELECTION ANALYSIS OF SOME POPULATIONS IN THE *SALDULA* *PALLIPES* SPECIES COMPLEX (HEMIPTERA: SALDIDAE)

Dean S. Mulyk

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Members of the *Saldula pallipes* species complex are small, well camouflaged shore inhabiting insects that have defied taxonomic resolution by traditional morphological and life history methods. Vertical polyacrylamide gels were used to measure genetic variation in populations of *Saldula pallipes*, *S. palustris*, *S. opacula*, and *Salda provancheri*. Saldid genera and species can readily be separated using this technique. Allelochemicals emitted from habitat substrate cause anemotactic reactions in *Saldula*. Various populations display differences in habitat specificity in choice chamber and wind tunnel trials. Electrophoretic data in conjunction with habitat selection behavioural observations can be used to ascertain population discreteness in the *Saldula pallipes* complex.

### EFFECT OF AN EARLY AND LATE- SEASON INSECTICIDE APPLICATION ON SEED ALFALFA INSECTS AND YIELD

Burton D. Schaber

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LETHBRIDGE, Alberta  
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Alfalfa is grown for seed on approximately 9,500 ha in Alberta. Pest insects such as *Lygus* spp., and the alfalfa plant bug, *Adelphocoris lineolatus* (Goeze), can drastically reduce seed yield if they are not properly controlled. However, little is known of the damage caused by these pest insects during early seed formation and development. Field trials were conducted over a two year period to determine the effect on lygus, alfalfa plant bug, and alfalfa seed yield from a combination of early and late-season applications of the insecticide Trichlorfon. Effects were dependent on the time of application, year and insect species. Trichlorfon treatments significantly reduced lygus bugs, but had no

effect on alfalfa plant bugs. Generally, late-season treatments of Trichlorfon were more effective than early-season treatments in increasing seed yield.

### MESEMBRINELLIDAE (CALLIPHOROIDEA), FLIES OF THE NEOTROPICAL RAINFOREST

Robert Cuny

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Mesembrinellidae are large (1-5cm), mostly pale, quiet flies of the shady ground layer of the South American rain forest. The 3rd instar larvae are deposited by the larviparous female on decaying matter, such as feces or rotting fruit, but the first instars are nourished in the uterus. Fierce competition for the scarce resources with dung bees, dung beetles, butterflies, ants, grasshoppers, and cockroaches results in the disappearance of these resources within a matter of hours. This necessitates adaptations in these flies to hasten their larval development.

The Mesembrinellidae are most closely related to the palaeotropical Bengaliidae. I propose the recognition of 11 known genera (new: *Trichocalyptromyia*, *Azulina*, and *Gordomyia*; resurrected: *Promesembrinella*, *Leptoda*), and 47 species and subspecies within this family. The most plesiomorphic genus, *Laneella*, lives in southeastern Brazil, while the most apomorphic genus, *Trichocalyptromyia*, occurs in Mexico. The most successful genera, *Eumesembrinella*, *Mesembrinella*, and *Leptoda*, have expanded their range dramatically since the last glaciation time. I found two new species, *Promesembrinella arazara* and *P. inambari*, in eastern Peru. These species, and all remaining species appear to have a very restricted distribution, and may have remained close to their ice age refugia.

## TRIALS AND TRIBULATIONS IN GREENHOUSE INTEGRATED PEST MANAGEMENT

Marilyn Y. Steiner  
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An overview is presented by the research effort towards implementing integrated pest management in greenhouse crops in Alberta. Particular emphasis is placed on thrips control in vegetable crops and sweet potato whitefly control in poinsettias. Many factors contribute to the overall success of any program, including grower attitudes, the history of pesticide use, the reliability of biological supply houses, and pesticide resistance. The one acknowledged fact is that pesticides on their own cannot adequately control the pests.

## THREE ENIGMATIC AENIGMATIINAE (DIPTERA: PHORIDAE)

Brian V. Brown  
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The Aenigmatiinae is a subfamily of the Phoridae which contains many structurally bizarre flies, the females of which are generally flattened and cockroach-like. The newly discovered males of the Neotropical aenigmatiine genera *Borgmeieriphora*, *Colyeria* and an undescribed genus show that these flies belong in the subfamily Metopininae. An ongoing reclassification of the Phoridae shows that the genus *Aenigmatias*, however, belongs to a more primitive grade of development.

## ECONOMIC ASSESSMENT OF THE CABBAGE MAGGOT *DELIA RADICUM* (L.) (DIPTERA, ANTHOMYIIDAE) IN CANOLA

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Estimates of the effect of natural cabbage maggot infestations on Tobin canola (*Brassica campestris* L.cv.) were made in a replicated experiment at the University Farm (Edmonton) during 1989. Comparison between caged plots and infested plots

grown under identical lighting conditions (in cages with North wall missing) provided estimates of the effect of maggot damage followed by secondary root rot invasion on oilseed yield. Comparison between open plots and plots grown in cages with north walls missing provided estimates of the effect of reduced lighting in cages. The increase in yield obtained by excluding root maggots was 39.9% in one experiment, 65.7% in the other. Applying these increases to the base value for open plots suggests that yields in excess of 200 g/m<sup>2</sup> (= 2000 kg/h) are obtainable at this location, if maggots can be controlled. Root maggots are shown to have major impact on oilseed yield under wet summer conditions.

## LABORATORY STUDIES OF GERRID- GERRID PREDATION

Héctor A. Cárcamo and John Spence  
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On many large prairie lakes *Gerris pingreensis* occurs in large, nearly monospecific populations despite annual colonization of those same habitats by *G. buenoi* and the ability of the latter species to flourish in the absence of *G. pingreensis*. Field experiments suggests that *G. pingreensis* excludes other gerrids from these habitats via interspecific predation. Our results show that *G. pingreensis* attempts predation on other gerrids more often and with more success than does *G. buenoi*. However, there is no clear tendency for interspecific predation to occur more frequently than cannibalism. A comparison of predation rates using laboratory-reared and wild-caught 5th instars of *G. pingreensis* suggests that either (1) there is selection against cannibalism in some long-established populations or (2) 3rd instar bugs differ in vulnerability to capture. We conclude that selective predation on other species is unnecessary to explain the monospecific populations of *G. pingreensis* observed in nature.

## PROGRESS IN BIOLOGICAL CONTROL OF LEAFY SPURGE WITH INSECTS

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Leafy spurge (*Euphorbia esula* complex), a perennial weed of European origin, has become naturalized in pastures and uncultivated land throughout Alberta, the prairie provinces and the northern Great Plains of the U.S.A. It is toxic and unpalatable to cattle, and is difficult to control because of its deep creeping root system. This paper reports on progress in biological control of leafy spurge in Alberta using host-specific insects from its native range in Europe. Three *Aphthona* species (Coleoptera: Chrysomelidae) have been established in the province. The most promising of these, *A. nigriscutis*, has now been established at a number of secondary sites through a redistribution program. The biology and effects of this insect and other agents being used against leafy spurge in Alberta is described.

## EFFECTS OF HOST SPECIES ON DEVELOPMENT AND OVIPOSITION OF THE FOREST TENT CATERPILLAR (*MALACOSOMA DISSTRIA*)

Dylan Parry and John R. Spence  
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We studied the effects of five different foliages used by wild populations of the forest tent caterpillar on larval development and choice of oviposition sites. Larval survivorship, development time, pupal mass and sex ratios of moths were compared among populations fed on trembling aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera*), alaska birch (*Betula neoalaskana*), saskatoon (*Amelanchier alnifolia*) and wild rose (*Rosa acicularis* and *R. woodsii*). Observations were made of larvae reared from the first instar and of wild-caught fourth instars that had developed on aspen and were transferred to an experimental food treatment at the fifth molt. Our results suggest that early instars are highly sensitive to foliage species but that later instars are more catholic feeders and do not suffer from feeding on other hosts.

Although field egg band surveys suggested that females oviposited preferentially on aspen near Dunstable, Alberta, we were unable to demonstrate a preference for aspen in laboratory oviposition tests.

## MORE SILK AND ASSOCIATED BEHAVIOURS OF *SIMULIUM VITTATUM* (DIPTERA: SIMULIIDAE) LARVAE

William B. Barr  
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*S. vittatum* larvae on anchored lines of silk brake themselves by applying mouthparts (probably mandibles) to a blob of silk they secrete on the end of the line. To climb anchored lines they grasp, with mouthparts and prolegs, silk that they add to the line as they climb. *S. vittatum* larvae interrupt filter-feeding to attach the thoracic proleg to the substrate, whereupon they resume filter-feeding with the lower cephalic fan resting, partially open, on the substrate. The significance of this behaviour is unknown. The associated silk has an "H" shape.

## PHOTOGRAPHING INSECTS

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This paper deals with effective techniques used to photograph insects in their habitat and also in the lab. The equipment consists of a single-lens reflex camera, an adjustable focussing bellows, an electronic flash unit, a 105mm short-mount lens, a 50mm lens, close-up lenses (proxars), a frame finder and a plumber's nightmare (camera support stand). The 105mm lens with bellows at general setting covers 4" x 6" at 20", and, at full extension, 2" x 11/4" at 7". The 50mm lens on the fully extended bellows covers 5/8" by 3/8" at 2" and is used for extreme close-ups of smaller subjects. It is attached to the plumber's nightmare for support. The 50mm lens with close-up lenses will give very good results in certain situations. Fast moving and crawling subjects such as larvae and ticks can be shot successfully in the lab on a movable glass stage. At times it is necessary to duplicate a slide to improve the composition or to enhance or correct the colour. The slides illustrate the equipment, techniques, and results.



## REFLECTIONS ON THE ESA PHOTOGRAPHIC RECORD

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The Alberta Society is the only provincial entomological society in Canada to include in its proceedings, a photographic record of the annual meeting on a regular basis. The origins of this practise, and what appears to have been the philosophy behind it, are briefly examined. Recommendations for the future are included.

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### THE GRAIN STINKBUG - A REVISION

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and

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The grain stinkbug is an occasional pest of cereal and other crops in southern Alberta, southwestern Saskatchewan and adjacent United States. It first appeared as a pest in Alberta in 1935 and caused widespread damage until 1941. Since then, except for a few small localized infestations, it has not been a problem until 1988 when a major outbreak occurred east of Bassano. About 21,000 acres of crop were damaged; yield losses ranged from 5-100% and the total loss was estimated to be 7,700 tonnes of grain.

Previously, the damage by stinkbugs was attributed to the Say stinkbug, *Chlorochroa sayi* (Stal); however, this species does not occur in Canada and it is now obvious that the identity of the species involved is *Chlorochroa uhleri* (Stal). Selected aspects of the biology and ecology of *C. uhleri* are discussed

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## FOREVER AMBER: OZAENINE CARABIDAE AND WEST INDIAN BIOGEOGRAPHY

George E. Ball  
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The four species of Ozaenini from the West Indies belong to the widespread Neotropical-southern Nearctic genus *Pachyteles* Perty. The West Indian species are not closely related to one another; this, plus their restricted islandic distributions, indicates separate incursions from mainland source areas: three into the Greater Antilles (probably from Middle America); and one into the Lesser Antilles (from South America). Two of the extant species are probably relatively recent arrivals (i.e., in Holocene time, within the past 10,000 years), but one is probably much earlier (as early as Miocene, 25 million years before present). The one species known only from an amber inclusion of probable Miocene age seems to be extinct.

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### SIMULATION MODEL FOR EUROPEAN CORN BORER PHENOLOGY IN SOUTHERN ALBERTA

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OLDS, ALBERTA  
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A temperature-dependent, degree-day (DD) model was developed for Alberta populations of the European corn borer, *Ostrinia nubilalis* Hübner. Starting with overwintered fifth instar larvae, the model predicts the temporal distribution of first and second instar larvae which are the stages vulnerable to chemical suppression. Predictions of several alternative models were compared with field data from southern Alberta. Use of a standard 10°C growth threshold to calculate physiological time scales allowed predictions as accurate as those obtained using either (1) a pooled threshold (11.4°) calculated specifically from Alberta populations, or (2) two thresholds reflecting significant differences in growth characteristics among life stages. The standard model predicts that eggs and first instar larvae should appear 60 and 150 DD after median pupation, respectively. Peak numbers of second instar larvae are predicted to occur 450 DD after the date of median pupation.

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**SPERM TRANSFER AND ITS USE IN  
MALES AND FEMALES OF *HEBRUS  
PUSILLUS* (HEMIPTERA,  
GERROMORPHA, HEBRIDAE)**

Karen E. Heming-van Battum and Bruce S. Heming  
Department of Entomology, University of Alberta  
EDMONTON, ALBERTA  
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In Holland, these bugs have one generation/year and overwinter as unmated adults, the males with degenerate testes and with their seminal vesicles filled with sperm. Males begin to mate the first warm days of spring but only the most persistent succeed. A male jumps on the back of a female, induces her to lower her ovipositor, and, within 12 min (at 18-24°C), introduces the endosoma of his phallus up its shaft and fills his seminal duct with sperm. The female draws this into her gynatrial sac at the end of copulation and transfers it into her coiled, tube-like, spermatheca in about 30 min, the sperm reversing themselves within it so that their heads face towards its mouth (the spermatheca can contain a maximum of 224 sperm and both sperm and spermatheca are longer than the female's body (1.9-2.2mm). A single large (0.6 mm) egg passes from an ovariole into the vagina where its apex is temporarily lodged in a fertilization chamber. Individual spermatozoa are drawn from or swim out of the spermatheca into a grooved fecundation canal in the roof of the vagina and forward to the micropyle of the egg. After fertilization, the egg enters the base of the ovipositor and is deposited.



**SPIDERS AND HARVESTMEN OF THE  
ATHABASCA AREA**

Donald Buckle  
620 Albert Avenue  
SASKATOON, Sask.  
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and  
Robert Holmberg  
Athabasca University  
ATHABASCA, Alta.  
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Pit trap collections made near Athabasca, Alberta between 1986 and 1989 produced 197 species of spiders belonging to 16 families, and 5 species of harvestmen belonging to 2 families. Thirty species of spiders and one species of harvestman are incompletely identified or new. Nearly 30% of the species are holarctic in distribution. About 50% of the spider species belong to the Linyphiidae. Lycosidae comprised 10%; Gnaphosidae, about 8%; Thomasidae, 6%. Because of the collecting methods, spiders living on trees and shrubs are under represented, i. e. Araneidae, Philodromidae, Salticidae and Theridiidae. It is estimated that the species collected represent about one half to two thirds of the local fauna.



(From John Henry Comstock "An Introduction to Entomology" Ninth Edition, 1949)

# ENTOMOLOGICAL SOCIETY OF ALBERTA

## MINUTES OF EXECUTIVE MEETING

SEPTEMBER 21, 1989

|          |                                                                 |                                                                  |
|----------|-----------------------------------------------------------------|------------------------------------------------------------------|
| Present: | Rick Butts<br>Colin Hergert<br>Gerry Hilchie<br>Robert Holmberg | Burt Schaber<br>Patrick Scholefield<br>John Spence<br>Jack Zloty |
|----------|-----------------------------------------------------------------|------------------------------------------------------------------|

Meeting called to order at 3:38 p.m.

Approval of Agenda

Annual Meeting Report

- All major items ready for the meeting; at this time it appears the meeting will nearly break even financially.
- President of Athabasca University, Terry Morrison, is unable to attend at 0900 hours due to other commitments; he will present his greetings at lunch. Discussion followed as to changes to meeting agenda.
- Holmberg outlined the contest he had initiated for Grades 1 to 8 in local schools. Prizes would be partially funded through money available in an old account at the University for science promotion. Discussion followed regarding prizes. Spence suggested a book prize donation to each of the participating schools. Schaber offered a book he had for one prize.

MOTION: Schaber/Hilchie: That the Society provide up to \$50.00 if the University Science Fund is insufficient to cover contest prize. Carried.

- Discussion followed as to who will judge this contest. Zloty suggested he would organize a vote by attendees at the meeting. Agreed.

Meeting agenda for Annual Meeting - HERGERT

- Discussion of items needed for meeting agenda.
- Copies of 1988 Minutes required.
- Holmberg suggested New Business item for agenda:
  - that the Society consider a new Insect Contest Category along the lines of the contest presented at this meeting.
- He also suggested a student contest for the Banff meeting. Perhaps the insect Collection Committee could contact the Stoney Reserve School; Banff and Canmore schools could be contacted for entries. It was agreed that Hergert

would draft an agenda for Holmberg to get typed and reproduced. and would also arrange to have copies of the 1988 meeting minutes available.

#### Treasurer's Report - HILCHIE

The Society was in good shape financially.

- Discussion on meeting expenses and impact on budget.
- Need for audited statement for 1988 and 1989; discussion ensued as to who to approach to act as auditors.

#### Nomination Committee - SCHABER/HERGERT

- Nomination slate presented. Nominations were sought so as to have at least two names put forward for each position vacant.
- Committee agreed to seek names for the position of:
  - auditors
  - ESC representative

and for someone to serve on the Resolutions Committee.

#### Joint Meeting - HERGERT

- Report on progress to date and reading of Gordon Pritchard's report.  
1991 meeting
- Butts offered to investigate a suitable site in Southern Alberta.

Thanks were extended to the Holmbergs for the excellent dinner provided for the executive.

Adjourned at 6:30 p.m.

Colin Hergert  
Recorder

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ENTOMOLOGICAL SOCIETY OF ALBERTA

MINUTES OF THE ANNUAL MEETING

DATE: Saturday, October 23, 1989.

PLACE: Athabasca University, Athabasca, Alberta.

1.0 Call to order.

The meeting was called to order at 10:30 by Past President C. R. Hergert.

There were 33 members present.

2.0 Approval of the agenda.

MOTION: That the agenda be approved.

Gooding /Leech. CARRIED.

3.0 Adoption of the minutes.

MOTION: That the minutes of the 1988 Annual Meeting as corrected be adopted

Spence /Ball. CARRIED.

4.0 Greetings from Entomological Society of Canada.

Spence presented greetings to the Entomological Society of Alberta on behalf of the Entomological Society of Canada.

5.0 Business arising from the minutes.

There was no business arising from the minutes.

6.0 Reports of officers.

6.1 Treasurer's report

Hilchie circulated a report that has not been audited.

MOTION: That the Treasurer's report, subject to approval by the Audit Committee, be accepted.

Griffiths /Spence. CARRIED.

Hilchie presented a verbal interim financial report for the period ending 30 September, 1989.

MOTION: That the interim financial report be accepted.

Hilchie /Leech. CARRIED.

6.2 Editor's report.

Evans reported that he would like to reduce the size and weight of the Proceedings of the Entomological Society of Alberta. He requested a clarification on who is responsible for making these changes and whether a formal request has to be brought to the Executive or to the General Meeting. By consensus, it was agreed that the matter should be the responsibility of the Editor.

MOTION: That the report as presented be accepted.

Evans /Spence. CARRIED.

6.3 Meeting Committee report.

Holmberg presented a verbal report. He reported that the meetings went well and that a draw on reserve funds may be necessary to cover the expenses of the keynote speaker. Holmberg thanked Pohl, Nichols and Hilchie for all the work they have done to make the meetings a success.

MOTION: That the report of the Meeting Committee be accepted.

Holmberg/Schaber. CARRIED.

6.4 Secretary's report.

There was no report from the secretary

6.5 Regional Director's report.

J. R. Spence presented his report.

Since the Entomological Society of Alberta met before the Annual Meeting of the Entomological Society of Canada, J. Spence presented highlights of activities that took place during the year. The annual meetings of the Entomological Society of Canada for the next three years will be:

1990 Banff, Alberta. October 7-10

1991 Montreal, Quebec. October 23-26

1992 Saskatoon, Saskatchewan

He reported that the property purchased to house the Society offices had to be sold because of zoning regulations, that one Student Research-Travel grant has been awarded and that the Publications Committee is recommending that the Canadian Entomologist be published bi-monthly.

The Executive of the Entomological Society of Canada for next year is:

Past President	D. C. Eidt
President	J. N. McNeil
First Vice-President	J. E. Laing
Second Vice-President	R. Ring
Treasurer	D. E. Bright
Secretary	R. West

MOTION: That the report of the Regional Director be accepted.

Spence/Heming. CARRIED.

6.6 President's report.

In the absence of the President, Hergert read the President's report which will be printed in complete form elsewhere in these proceedings.

MOTION: That the President's report as read be accepted.

Hergert/McClay. CARRIED.

7.0

Reports of Standing Committees.

7.1 Awards Committee.

Hergert reported that there were no nominees presented this year.

MOTION: That the candidate that was submitted for award last year be re-submitted this year.

Leech/Scholefield. CARRIED.

MOTION: That the report of the Awards Committee be accepted.

Hergert/Langor. CARRIED.

7.2 Representative to the Environment Council of Alberta.

J. A. Shemanchuk read his report which will be published elsewhere in these proceedings.

MOTION: That the report be accepted.

Shemanchuk/Steiner. CARRIED.

7.3 Insect Collection Competition Committee.

Four insect collections were submitted to the Insect Collections Competition Committee. Three were placed in the open category (14 years and older) and one in the youth category (under 14 years). In addition, there were children's insect poster competitions in two age groups. Members present at the meeting were asked to vote on the posters which helped to make the selection and helped to instill participation by delegates at the meeting.

Winners in the Insect Collections Competition were:

First Prize - D. C. Szabol	\$50.00
Second Prize - K. Lacey	\$30.00
Third Prize - M. Valencia	\$15.00
Youth Prize - D. Macaulay	Book Prize

In the Children's Poster Competition a grade 4 and a grade 5 group from Athabasca Elementary School were winners.

MOTION: That the report of the Insect Collections Committee be accepted.

Zloty/Jones. CARRIED.

MOTION: That the recommendation from the Executive to the Annual General Meeting that suitable books be purchased for the two schools that participated in the poster competition be accepted and that the Awards Committee take appropriate action.

Holmberg/Shemanchuk. CARRIED.

7.4 Resolutions Committee.

MOTION: Whereas the organizing committee of this meeting has provided a program of wide interest to all, be it resolved that the membership thank Stephen Nichols and Greg Pohl for their efforts;

and whereas local arrangements contribute significantly to a successful meeting, be it further resolved that the membership thank Robert Holmberg for his success in this regard and for making his home available for registration of members and for the reception and also thank his wife Catherine, his daughter Vanessa, his son Conrad and their friend Christine for their superb spread of food and drink;

and whereas the success depends upon the choice of an interesting theme be it further resolved that the membership thank Brian Brown and the keynote speaker Don Feener for giving us a glimpse of the fascinating interaction occurring between phorid flies and ants;

and whereas the banquet at a meeting is a social highlight be it further resolved that the membership thank P. Barlow and the cafeteria staff of the University of Athabasca for their fine meal, and Jerry Thormin for his beautifully illustrated after-dinner talk on the joys and sorrows of collecting in the neotropics;

and whereas suitable facilities and surroundings are critical to the success of a meeting; be it further resolved that the membership thank Terry Morrison, President, Athabasca University for making the Governing Council Chambers available and for providing lunch at his residence and also thank Terry Pyrozko for operating the projection equipment;

and whereas, the annual meeting would not be complete without a photographic record, be it finally resolved that the membership thank Bill Nelson for taking photographs at the meeting and for reminding us that a replacement must be chosen for the next annual meeting.

Heming/Leech. CARRIED.

8.0

New Business.

8.1 Nominations Committee Report.

The Nominations Committee presented the following slate:

President.....	B. D. Schaber
Vice-President	D. Langor
Secretary	R. Lenowski
Treasurer.....	G. J. Hilchie
Director	J. W. Jones
Editor.....	W. G. Evans
Auditor.....	M. G. Dolinski
Regional Director to ESC	A. McClay
Representative to ECA	J. A. Shemanchuk
Insect Collection	J. Zloty

As there were no other nominations, the slate was declared elected.

Craig/Thormin. CARRIED.

8.2 Joint Meeting.

The Entomological Society of Alberta will meet with the Entomological Society of Canada at Banff, Alberta, October 6-9, 1990.

8.3 Entomological Society of Alberta 1991 Meeting.

A consensus was reached that the 1991 Annual Meeting of the Entomological Society of Alberta be held in a location in southern Alberta, perhaps Brooks and that the Society continue the practice of bringing in Theme speakers.

8.4 A discussion ensued on the merits of being affiliated with the Canadian Federation of Biological Societies.

MOTION: That the Entomological Society of Alberta supports the Entomological Society of Canada in joining the Canadian Federation of Biological Societies.

Holmberg /Heming. CARRIED.

8.5 Biting fly research in Canada was briefly discussed.

MOTION: That the Entomological Society of Alberta support a resolution from the Entomological Society of Canada deploring the lack of support for biting fly research in Canada as evidenced by the recent closure of the Biting Fly Centre in Winnipeg, and by lack of specialists in the biting fly taxa in the Biosystematics Research Centre.

Ball/Craig. CARRIED.

ADJOURNMENT.

The meeting adjourned at 12:00 h. on a motion by B. Heming.

(In the absence of the Secretary minutes were recorded by J. A. Shemanchuk).

9.0

EXECUTIVE AND COUNCIL 1989

Officers

- President: G. Pritchard, Biology Department, University of Calgary,
Calgary, Alberta T2N 1N4
- Vice-President: B. D. Schaber, Research Station, Agriculture
Canada, P.O. Box 3000 Main, Lethbridge, Alberta T1J 4B1
- Treasurer: G. J. Hilchie, Department of Entomology,
University of Alberta, Edmonton, Alberta T6G 2E3
- Secretary: J. Acorn, Department of Entomology, University
of Alberta, Edmonton, Alberta T6G 2E3
- Editor: W. G. Evans, Department of Entomology,
University of Alberta, Edmonton, Alberta T6G 2E3

Council

The above plus:

- Past President: C. R. Hergert, 2316 Crestwood Road S.E.,
Calgary, Alberta T2C 0C6
- Regional Director to the Entomological Society of
Canada: J. R. Spence, Department of Entomology,
University of Alberta, Edmonton, Alberta T6G 2E3
- Directors: A. T. Finnermore, Natural History Section,
Provincial Museum of Alberta, 12845 - 102 Avenue,
Edmonton, Alberta T5N 0M6 (1990)
- P. Scholefield, Alberta Environment, 2nd Floor
Deerfoot Square, 2938 - 11 Street N. E., Calgary,
Alberta T2E 7L7 (1989)
- R. Butts, Agriculture Canada, Research Station,
P.O. Box 3000 Main, Lethbridge, Alberta
T1J 4B1 (1991)

EXECUTIVE AND COUNCIL 1990

Officers

President:	B. D. Schaber, Research Station, Agriculture Canada, P. O. Box 3000 Main, Lethbridge, Alberta T1J 4B1
Vice-President:	D. Langor, Canadian Forestry Service, Northern Forestry Centre, 5320 - 122 Street, Edmonton, Alberta T6H 3S5
Treasurer:	G. J. Hilchie, Department of Entomology, University of Alberta, Edmonton, Alberta T6G 2E3
Secretary:	R. Linowski, P. O. Box 1305, Brooks, Alberta T0J 0J0
Editor:	W. G. Evans, Department of Entomology, University of Alberta, Edmonton, Alberta T6G 2E3

Council

The above plus:

Past President:	G. Pritchard, Biology Department, University of Calgary, Calgary, Alberta T2N 1N4
Regional Director to the Entomological Society of Canada:	A. McClay, Alberta Environmental Centre, Bag 4000, Vegreville, Alberta T0B 4L0 (1992)
Directors:	J. W. Jones, Alberta Agriculture, Alberta Special Crops and Horticultural Research Centre, Bag Service 200, Brooks, Alberta T0J 0J0 (1992)
	R. Butts, Agriculture Canada, Research Station, P.O. Box 3000 Main, Lethbridge, Alberta T1J 4B (1991)
	A. T. Finnermore, Natural History Section, Provincial Museum of Alberta, 12845 - 102 Ave., Edmonton, Alberta T5N 0M6 (1990)

Financial Statement
Year ending December 31, 1988

Credits

Bank assets, December 31, 1987

totals
5333.86

Memberships	1991 credit.....	2.00	
	1990 1 @ \$10.00 & credit.....	16.00	
	1989 58 @ \$10.00	580.00	
	1989 student 8 @ \$5.00	40.00	
	1988 24 @ \$4.00.....	96.00	
	1987 3 @ \$4.00.....	12.00	
	exchange, 3 transactions	2.75	
	Library subscriptions:		
	1989 2 @ \$10.00.....	20.00	
	1988 3 @ \$6.00	18.00	
	1987 2 @ \$6.00	12.00	
	1986 1 @ \$6.00	6.00	
	exchange, 2 transactions	<u>4.92</u>	
		809.67	809.67
Annual meeting, 1988			
Registration and Banquet			
	Registration 32 @ \$20.00.....	640.00	
	Registration (student) 6 @ \$10.00	60.00	
	Banquet 48 @ \$15.00.....	<u>720.00</u>	
		1420.00	1420.00
Miscellaneous			
	Bank interest	308.45	
	Bank credit adjustment & rebate.....	<u>6.80</u>	
		315.25	315.25
			<u>\$7878.78</u>

Expenditures

Proceedings 1986	Printing.....	466.60	
Proceedings 1988	Photography honorarium, 1988.....	<u>150.00</u>	
		616.60	616.60
Annual Meeting 1988	Reception.....	320.65	
	Coffee service.....	172.50	
	Banquet	750.00	
	After dinner speaker, honorarium	<u>50.00</u>	
		1293.15	1293.15
Executive Meetings	Travel claim.....	45.00	45.00
Miscellaneous	Bank service charges	17.47	
	Replacement cheques.....	7.58	
	Postage and Stationary 1987	41.70	
	Postage and Stationary 1988	145.28	
	Photocopy charges.....	18.15	
	Science Fair book prizes	39.00	
	Insect collection prizes	<u>90.00</u>	
		359.18	359.18
			<u>\$2313.93</u>
Balance summary			
Total Credits		\$7878.78	
Total Disbursements.....		\$2313.93	
Bank Assets (December 31, 1988).....		\$5564.85	

Gerald J. Hilchie
Treasurer

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## REGIONAL DIRECTOR'S REPORT

The Executive of the Entomological Society of Canada met in Ottawa during 23-24 April 1989. The important matters dealt with are covered in the President's update in the September issue of the ESC Bulletin (vol. 21, no. 3). I will highlight only a few important issues here.

**ESC Office Space.** It appears that the space purchased (959 Merrivale Rd., Ottawa) cannot be rezoned to accommodate the society's activities, despite the positive responses received to earlier enquiries. Therefore, a decision about what to do with the property will have to be made by the Governing Board at the St. John's meeting of the ESC. Unless I hear contrary opinions from ESA members, I will favour selling the property and looking for another appropriately zoned property to accommodate ESC needs.

**Canadian Federation of Biological Sciences.** The Biological Council of Canada is floundering and will be disbanded soon. A vote of the ESC membership favoured joining the CFBS but not many members voted. I am in favour of belonging to an umbrella organization that can be a strong advocate for biological science in Canada. The CFBS is presently mainly a medical society but a number of present members of the BCC are going to join. Unless I am persuaded otherwise, I will argue in favour of entry into the CFBS at the Governing Board meeting provided that (1) we are not charged for foreign members, and (2) that it can be done without a large increase in ESC annual dues for Canadian members.

**Travel Grants.** At last year's annual meeting the ESC Governing Board approved a program to provide travel grants to assist graduate students in visiting research laboratories away from their home institution in order to gain experience helpful to their thesis programs. The first such grant was awarded to Ms. Fiona Hunter, a Ph.D. student with Jim Sutcliffe of Queen's University. Ms. Hunter spent her award to visit the Department of Entomology at the University of Alberta in connection with her work on the systematics of blackflies.

**The Canadian Entomologist.** A proposal to make The Canadian Entomologist a bimonthly publication will be brought before the Governing Board in St. John's. The move will save some money (estimated at \$6,000-7,000/yr.) and the greater flexibility will make it easier for the staff running the journal. Unless I am persuaded by alternative arguments I will vote in favour of this change. Members should note that the page charges for the Canadian Entomologist have been reduced as a result of last year's fee increases.

**Future ESC Annual Meetings.** The 1991 meeting will be held jointly with the Société d'entomologie du Québec in Montreal during 21-23 October. The national society has accepted an invitation to meet with the Entomological Society of Saskatchewan in 1992. Of course next year's meeting will be in Banff and hosted by us.

**New Executive for the ESC.** This has been just published in the last Bulletin. I note that Richard Ring of the University of Victoria has been elected as our new second Vice-President and that Thelma Finlayson has been elected to Honorary Membership.

John R. Spence

## REPORT OF REPRESENTATIVE OF THE ENVIRONMENT COUNCIL OF ALBERTA

As representative from the Entomological Society of Alberta on the Public Advisory Committees of the Environment Council of Alberta, I attended five meetings of the Rural Sub-committee. The aim of the Rural Sub-committee is to maintain sustainability of rural environment for agriculture, residential and recreational use and the wildlife it supports.

The Rural Sub-committee heard from speakers on Plant Patenting, Grassland Restoration, Soil Salinity, Soil Conservation in Canada, and the Blood Indian Reserve Irrigation Project. As evident from the above studies, all focused on issues relating to soil degradation and soil management. Issues raised and discussed during these studies were:

1. Expressions of concerns on the current policy of subsidizing summerfallow, which is at odds with prudent soil management.
2. Sub-committee researched and compared soil conservation strategies. U.S.D.A. Bill eligibilities of subsidies. Ties to soil conservation practices.
3. Issues of marginal land conversion were addressed and will continue to be monitored.
4. The Sub-committee further expanded their perspective on other areas of concern in the rural environment such as gas royalties and aquifer and water well contamination.

The Alberta Conservation Strategy project is progressing well. Nineteen sectors were established and the text for these have been written and the following were published in 1988:

1. Environment by Design: The Urban Place in Alberta.
2. Tourism in Alberta.
3. Energy Conservation: A Goal for Albertans?
4. Agricultural Considerations for Today and Tomorrow.
5. Renewable Energy: The Power and the Potential
6. Dinosaurs and Distant Drums: The Future for Alberta's Heritage Resources.

During 1988 the ECA operated without a Chief Executive Officer as Alistair Crerar left for a position in Pakistan. A change of ministers in the Department of the Environment also occurred which did not help the administration of the ECA. Budget cuts reduced activities of sub-committees somewhat but the committees are now operating with the minimum of study sessions and any further cutbacks could damage the effectiveness of the Public Advisory Committees.

J. A. Shemanchuk

**BY-LAWS****ENTOMOLOGICAL SOCIETY OF ALBERTA****ARTICLE I****Title**

This Society shall be known as the Entomological Society of Alberta in affiliation with the Entomological Society of Canada.

**ARTICLE II****Object**

The object of the Society shall be to foster the advancement, exchange, and dissemination of the knowledge of insects in relation to their importance in agriculture, horticulture, forestry, public health, industry, and for its own sake, among the people of the Province of Alberta.

**ARTICLE III****Membership, Dues, and Expenditures**

- a. Any persons interested in entomology may become a Full Member by submitting a completed membership application form and membership fee payment to the Secretary of the Society.

Honorary Life Membership may be conferred on anyone who has performed long and distinguished service in the field of entomology. The total of Honorary Life Members shall not exceed five percent of the total membership at the time of election. An Honorary Life Member will enjoy all the rights and privileges of Full Members but will be exempt from payment of dues. All Full Members are entitled to propose the name of prospective Honorary Life Members provided each such proposal is supported by two other Full Members and documentation is submitted in writing to the Secretary at least one month prior to the Annual Meeting. Such Honorary Life Members will be elected at an Annual Meeting.

- b. A member may withdraw from the Society upon giving notice to the Secretary.
- c. An annual fee necessary for the operation of the Society shall be levied for each member as provided for in Section 1 of the Rules and Regulations.
- d. The Executive shall have power to meet expenses required in the normal operation of Society business. Such expenditures shall be subject to subsequent ratification at the Annual Meeting by the majority of the members present.
- e. A member who neglects to pay the annual fee for two consecutive years shall automatically cease to be a member.

**ARTICLE IV****Meetings**

Meetings may be called each year by the President at times and places suitable to the majority of the members. The fall meeting normally shall be considered the Annual Meeting and shall be held in the locality decided upon at the preceding Annual Meeting. One-quarter of the total paid-up membership shall constitute a quorum.

**ARTICLE V****Officers**

These officers shall constitute the Executive of the Society with full power to act on behalf of the Society within the bounds of the Rules and Regulations, and to appoint committees as necessary.

**ARTICLE VI****Council**

The Council shall consist of the five Officers, the immediate Past-President, a Regional Director to the Entomological Society of Canada, and three Ordinary Directors. The Ordinary Directors shall represent the various fields of entomology and the geographical areas of Alberta as widely as possible.



## ARTICLE VII

### Elections

Elections shall be held once a year at the Annual Meeting, and Officers so elected shall take office at the beginning of the following calendar year and remain in office for a term of one year.

The office of President shall not normally be held by the same person for two consecutive years. The Vice-President shall normally follow his/her term of office with a term as President. The Secretary, Treasurer, and Editor shall be eligible for immediate re-election.

The Directors shall also take office at the beginning of the calendar year following their election. The Regional Director shall be elected for a period of three years, with his/her term of office beginning at the end of an Annual Meeting of the Entomological Society of Canada. A Regional Director is not immediately eligible for re-election.

The term of office of each Ordinary Director shall be three years, with one Director replaced in each year. Ordinary Directors are not immediately eligible for re-election.

## ARTICLE VIII

### Vacancies

Vacancies in any office (except that of President) on the Council between elections shall be filled by appointment by the President, with the concurrence of Council, the tenure of such co-opted members to terminate at the end of the calendar year during which the appointment is made. A vacancy in the office of the President shall be filled by the Vice-President who will then serve his normal term as President.

Members elected at the Annual Meeting to fill vacancies on Council shall complete the period of service of the Council members whose places they have taken. On completion of this term they shall be eligible for re-election only if their period of service (co-opted and/or elected) has not exceeded 18 months.

## ARTICLE IX

### Duties of Officers

The President shall preside at all meetings and act ex-officio on all committees.

The Vice-President shall, in the temporary absence or disability of the President, perform the duties and exercise the powers of the President, shall chair the Science Fair Liaison Committee and the Membership Committee, and shall perform such other duties as shall from time to time be imposed upon the Vice-President by the Council.

The Secretary shall maintain a record of all meetings and act as custodian of minute books and current correspondence, and shall forward appropriate material to the University of Alberta for storage in the Society's archives.

The Treasurer shall receive and disburse all funds, handle all correspondence relating to membership in the Society, and prepare the annual financial statement.

The Editor shall receive and record reports and publications on behalf of the Society and act as editor of the Proceedings.

## ARTICLE X

### Signing Officers

The signing officers of the Society shall be the Treasurer and either the President or Secretary.

## ARTICLE XI

### Alteration of the By-Laws

The By-Laws may be altered or amended at any Annual Meeting of the Society with the approving vote of three-fourths of the members present and in good standing. Such alterations must be made by Notice of Motion, which shall have been sent to the Secretary and a copy of such forwarded to all members at least two weeks before the Annual Meeting.

November, 1986

|                                                          |                                                |                                                           |               |                                    |                      |
|----------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------|---------------|------------------------------------|----------------------|
| land of blackflies                                       | Gerry Hilchie<br>Burt Schaber                  | Host:<br>Robert Holmberg                                  | slept well    |                                    |                      |
| Joe Shemanchuk<br>George Ball<br>Kay Ball<br>Kurt Depner | Ron Gooding<br>Jessica Ernst<br>Sheila Gooding | Marg Nelson<br>Hazel Gushul                               |               |                                    |                      |
| Marilyn Steiner<br>Evan Gushul<br>Doug Craig             | Kurt Depner<br>Doug Craig<br>Bill Nelson       | what's wrong over there?<br>Robert and Catherine Holmberg |               |                                    |                      |
| Kurt Depner<br>John Spence                               | Colin Hergert<br>Jim Ryan                      | Evan Gushul<br>Kurt Depner                                | Colin Hergert |                                    |                      |
| Keynote :<br>Donald Feener Jr.                           | Dean Mulyk                                     | Burt Schaber                                              | Robert Cuny   | Bert Finnamore<br>Graham Griffiths |                      |
|                                                          | Greg Pohl                                      | Marilyn Steiner                                           | Brian Brown   | Graham Griffiths                   | Ron Gooding          |
| Hector Carcamo                                           | Dylan Parry                                    | Nutrition Kaleidoscope                                    | Alex McClay   | Bill Barr                          | Mr. & Mrs. Scarecrow |



ENTOMOLOGICAL SOCIETY OF ALBERTA



37th ANNUAL MEETING - ATHABASCA

|                                                                  |                                        |                                                                                              |                                                               |
|------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Evan.....Gushul<br>To photograph.....Insects                     |                                        | Kid's<br>Predator                                                                            |                                                               |
| Doug<br>Craig<br><br>Bruce<br>Heming<br><br>Kurt<br>Depner       |                                        | Pat<br>Scholefield<br><br>Marilyn<br>Steiner<br><br>Jim Jones                                | Colin Hergert<br><br>Anna<br>Hergert<br><br>Bert<br>Finnamore |
| Kay<br>Ball<br><br>George<br>Ball<br><br>Ron & Sheila<br>Gooding | Rick<br>Mikalonis<br><br>Dennis<br>Lee |                                                                                              | Robin<br>Leech<br><br>George<br>Evans<br><br>Jim<br>Ryan      |
| Darren<br>Pollock<br><br>Tim<br>Spanton<br><br>Herb<br>Cereski   | Hazel<br>Gushul<br><br>Evan<br>Gushul  | Clara<br>Shemenchuk<br><br>Bill<br>Barr                                                      | Colin<br>Hergert                                              |
| "Inca<br>Remnant"                                                | Terry<br>Thormin                       | Jim<br>Jones                                                                                 |                                                               |
| once was                                                         |                                        | Dennis<br>Lee                                                                                | Bruce<br>Heming                                               |
| Joe<br>Shemanchuk<br><br>Colin<br>Hergert                        |                                        | Graham Griffiths<br>Doug Craig<br>Terry Thormin<br>Robin Leech<br>Rick Mikalonis<br>Jim Ryan | AGM<br><br>George<br>Evans<br><br>Kay Ball                    |
|                                                                  |                                        | Meanook<br>Biological<br>Station                                                             |                                                               |
|                                                                  |                                        | at rest<br>at last                                                                           |                                                               |

## RULES AND REGULATIONS

### ENTOMOLOGICAL SOCIETY OF ALBERTA

1.     a.     The annual fee for full membership shall be \$10.00.
- b.     The fiscal year of the Society shall coincide with the calendar year; fees are payable in advance, at the time of the Annual Meeting.
2.     a.     The interim financial statement shall be presented by the Treasurer at the Annual Meeting and the final, year-end statement at the first general meeting following the end of the fiscal year.
- b.     Two auditors shall be elected at each Annual Meeting to examine the accounts of the current year and the annual financial statement.
3.     Registration fees for student members of the Entomological Society of Canada attending the Entomological Society of Canada meetings shall be reduced when these meetings are held in Alberta with the Entomological Society of Alberta as host
4.     The following standing committees shall exist to assist the ESA Council achieve the objectives of the Society:
  - a.     Awards Committee - members: Past President, Regional Director to ESC, and the Regional Directors of the ESA. Duties are to solicit and generate nominations of the Entomological Society of Alberta members for Entomological Society of Canada awards (e.g. Gold Medal, Gordon Hewitt, Norman Criddle) and Entomological Society of Alberta awards (e.g. Honorary Membership, student prizes).
  - b.     Environment Council of Alberta - one ESA member shall be elected to represent the Society.
  - c.     ESA-ESC Joint Meeting Committee - to be established a year preceding any joint meeting of the Entomological Society of Canada and the Society; members to be selected from Society membership.
  - d.     Insect Collection Competition Committee - members: one elected member plus two other members appointed by the elected member at each Annual Meeting of the Society.
  - e.     Nomination Committee - members: the Past President, Vice-President, and one member in good standing shall prepare a nomination slate prior to each Annual Meeting and the Vice-President shall present the slate of nominated Executive Council members at the Annual Meeting.
  - f.     Resolutions Committee - members: two Society members shall be appointed by the Nomination Committee immediately preceding each annual meeting.
  - g.     Science Fair Liaison Committee - members: Vice-President (as chairman), and three Ordinary Directors. Other members to be appointed as necessary by the Committee. Duties - to maintain contact with the principal Science Fairs in Alberta.
  - h.     Membership Committee - members: Vice-President (as chairman) and three Ordinary Directors. Duties: to publicize the objectives and activities of the Society in such a way as to recruit new members to the Society.
  - i.     All elections and appointments are not to exceed one year unless otherwise approved by the Society.
5.     The Rules and Regulations may be changed by a motion approved by the majority of the members present at any general meeting.



# LIST OF MEMBERS

(Revised June, 1989)

## HONORARY MEMBERS

J. B. Gurba  
9415 - 144 Street  
EDMONTON, Alberta  
T5R 0R8  
Res. (403) 452-6752

E. T. Gushul  
1714 - 15 Avenue South  
LETHBRIDGE, Alberta  
T1K 0W9  
Res. (403) 328-2426

L. A. Jacobson  
1011 - 14 Street South  
LETHBRIDGE, Alberta  
T1H 2W3  
Res. (403) 327-3754

R. I. Larson  
2503 - 12 Avenue South  
LETHBRIDGE, Alberta  
T1K 0P4  
Res. (403) 327-2089

W. A. Nelson  
1020 Fern Crescent  
LETHBRIDGE, Alberta  
T1K 2W3  
Res. (403) 327-4736

## MEMBERS

J. Acorn  
15714 86 Ave.  
EDMONTON, Alberta  
T5R 4C4

G. E. Ball  
Department of Entomology  
University of Alberta  
EDMONTON, Alberta  
T6G 2E3  
Bus. (403) 492-2084  
Res. (403) 483-4951

K. Ball  
8108 - 138 Street  
EDMONTON, Alberta  
T5R 0C9  
Res. (403) 483-4951

W. B. Barr  
15709 - 89 A Avenue  
EDMONTON, Alberta  
T5R 4T1  
(403) 484-5788

D. Blades  
Department of  
Environmental Biology  
University of Guelph  
GUELPH, Ontario  
N1G 2W1

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