

Proceedings of the Thirty-Fourth Annual Meeting of the



Entomological Society of Alberta

November 6-8, 1986
Provincial Museum of Alberta
Edmonton, Alberta

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34th ANNUAL MEETING
of the
ENTOMOLOGICAL SOCIETY OF ALBERTA

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WELCOMING REMARKS

34th ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF ALBERTA

Good morning, Ladies and Gentlemen. Thank you Dr. Gooding for the introduction but what I really am is one of those people you need to suffer through before you get to the purpose of your meeting.

It gives me great pleasure to welcome all of you to the Provincial Museum of Alberta. It was only a short time ago that we established an Entomology Program here and even a shorter time since we made the decision to host conferences. A brief history will put these events in their proper perspective.

The museum's general invertebrate collection was established rather abruptly in 1979, when approximately 60,000 specimens, mostly butterflies, beetles, and assorted molluscs, were transferred to us from the Riveredge Foundation in Calgary. I use the term 'abruptly' because the material had to be accepted and transported from Calgary in a very brief period of time or else the offer would be recinded. I was one of the drivers making the seemingly endless 28 trips by van required to transport the specimens. The collection itself had minimal research value and its content reflected almost anything except an organized direction of development. Its major redeeming feature, however, was an array of large, colorful and exotic specimens ideally suited for exhibition purposes. By obtaining the collection, then, of course, we also needed a curator to care for it.

The Riveredge collection remained dormant, or a pupae if you will, until we were able to establish a curatorial program in 1983, at which time Dr. Bert Finnamore was hired, a graduate of MacDonald College, McGill University. At the same time we were able to take Terry Thormin, a multit talented Habitat Foreground Artist at the Provincial Museum and convert his position to Entomology Technician, reflecting his long-time activity of butterfly collecting.

In the next three years Bert and Terry transformed, or perhaps I should say metamorphosed, the museum's invertebrate collection into an increasingly important entomological resource, one based on sound collection management and research principles. As I am sure many of you already know, Bert's research interests focus on wasps, a fact that is reflected in the major systematic content of the museum's new collection. Equally important is Bert's desire to communicate his science and we have before us two prominent examples - this meeting and our current Feature Exhibit - Butterflies: Beauty in Evolution, which I am sure many of you saw last night. This latter example is particularly gratifying in the broad context of the museum because it demonstrates the full range of curatorial activities undertaken by museum programs - collection, research and interpretation. It also capitalized on the strength of the original nucleus of the museum's invertebrate collection, the Riveredge material.

As I mentioned earlier, it was only recently that the museum made the decision to reflect more the increasing maturity of our institution, its staff and its collections. Becoming a meeting place for affiliated interest groups such as yourselves was a prime goal and we are gratified your society has expressed its confidence in this direction we are taking.

Once again, it gives me great pleasure to welcome all of you to the Provincial Museum. I hope you enjoy your visit and our facilities. If there is anything else we can do to contribute to the success of your meeting, please let me know. Thank you.

Dr. Philip H.R. Stepney,
Assistant Director, Natural History.

* * * * *

ORIGIN AND EVOLUTION OF THE NORTH AMERICAN CLEONINAE (COLEOPTERA: CURCULIONIDAE)

R.S. Anderson
University of Alberta, Edmonton, Alberta

There are 34 species of Cleonini in North America. Cleonis pigra was accidentally introduced and restricted to the northeastern United States and adjacent Canada. The six species of Stephanocleonus are northern in distribution and likely entered North America across Beringia during late-Tertiary or Quaternary time. The eight species of the endemic Apleurus are found in arid habitats in the extreme southwestern United States and adjacent Mexico. Ancestral species of this genus are hypothesized to have entered North America across Beringia during mid-Tertiary time. They were very likely associated with Compositae in grassland habitats. Subsequent diversification in Apleurus appears primarily due to species shifting to association with increasingly arid habitats. The nineteen species of Cleonidius are found in arid habitats throughout the western United States and Canada; two species are eastern in their distributions. As in Apleurus, ancestral species are hypothesized to have entered North America across Beringia during mid-Tertiary time in grassland habitats on Compositae. Unlike in Apleurus, subsequent diversification appears due in large part to host plant shifts. Most species remain associated with the primitive grassland habitat.

* * * * *

MEASUREMENT OF FLUID FLOW BY LARVAE OF BLACK FLIES (DIPTERA: SIMULIIDAE)

Markus Eymann

The cuticle of Simulium vittatum, S. decorum, S. aureum, S. meridionale, S. venustum (verecundum), S. piperi, Cnephia dacotensis, Metacnephia pallipes, Crozetid crozetensis, Prosimulium esselboughi, Austrosimulium sp., Stegopterna mutata, Gveniera denerin and Gymnopais dichopticus was examined under the light microscope for sensilla which may function in measurement of water flow. S. vittatum was stained with methylene blue to test for innervation of the putative sensilla. Four classes of sensilla were found: (1) short [4-130 μ m] trichoid sensilla on the cuticle of the abdomen and thorax, (2) longer, stouter trichoid sensilla on the laterodorsal expansions of the posterior proleg, (3) 3 pairs of campaniform or coeloconic sensilla just outside the ring of hooks on the posterior proleg [4 pair of Cr. crozetensis], and (4) 1 pair of trichoid sensilla inside of the ring of hooks on the posterior proleg [2 pair in Cr. crozetensis]. The campaniform or coeloconic sensilla of the posterior proleg may measure flow indirectly by detecting cuticular strain caused by motion of the larva induced by turbulence. The trichoid sensilla on the body and the laterodorsal expansions are inside of the laminar sublayer and are therefore not exposed to turbulence; they probably measure flow directly by responding to shear stress or to surges that penetrate the laminar sublayer.

* * * * *

ENCEPHALITIS MONITORING IN SOUTHERN ALBERTA

P.J. Scholefield

Alberta Environment, Pollution Control Division,
Pesticide Chemicals Branch, Calgary

Since 1983, Alberta Environment's Pesticide Chemicals Branch has carried out an Encephalitis surveillance program. Live adult mosquito samples are collected weekly during the summer months from a number of locations in southern Alberta, using C.D.C. light traps baited with dry ice and no light bulb. The samples are submitted to Alberta Agriculture's Veterinary Laboratory in Edmonton where Dr. Papp-Vid analyses them for the presence of the encephalitis virus. A simple, yet proved reliable monitoring system has been established, as shown in 1983 when the virus was isolated from two samples taken on August 06. The virus was not isolated in the succeeding three years. An action committee has also been established to set in motion the necessary steps once the virus has been isolated. These steps include public awareness, increased monitoring and possible control measures.

* * * * *

THE DINGY CUTWORM (FELTIA JACULIFERA) - ONE SPECIES OR SEVERAL

J.R. Byers and D.L. Struble

Agriculture Canada, Lethbridge, Alberta

The dingy cutworm is one of the more common and widely distributed of North American noctuids. However, attempts to identify the sex pheromone and to develop synthetic sex attractants have previously been largely unsuccessful. Recently, identification of sex pheromone in extracts of female abdomen tips from isofemale lines, using a gas chromatographic-electroantennographic (GC-EAD) technique, revealed the existence of two different pheromotypes within southern Alberta populations. Males of the two types respond specifically and exclusively to the appropriate synthetic attractant. Both pheromotypes occur sympatrically across the prairies and, although one emerges several weeks earlier than the other, the seasonal flight periods overlap to a considerable extent. The two types are morphologically indistinguishable and so far as known have similar life histories and biology. Electroantennographs of specimens from Eastern Canada indicate the existence of additional pheromotypes.

* * * * *

WINTER STORAGE TEMPERATURE AND DURATION INFLUENCE ALFALFA LEAFCUTTER BEES

K.W. Richards and G.H. Whitfield

Agriculture Canada Research Station, Lethbridge, Alberta

Cocoons of the alfalfa leafcutter bee, the most important alfalfa pollinator in Canada, must be placed into winter storage to reduce losses by parasites and predators and to arrest prepupal development until adult bees are needed. Cocoons were stored for 0 to 22 months at 4 constant temperatures to examine the effects of temperature and duration of storage on adult survival, period of emergence, and sex ratio. Each month for 22 months, 1000 cocoons were removed from each temperature and incubated. A 5-parameter model of adult emergence for storage and temperature is described. High prepupal survival and a narrow period of adult emergence during incubation were observed when cocoons were stored at 5°C for 7 to 10 months.

For those cocoons held in storage longer than 12 months, a warmer storage temperature of 10°C provided good survival and adults emerged over a period of less than 20 days. Storage of cocoons longer than 17 months, however, was impractical because of greater than 90% mortality in the prepupae. A minimum storage period of about 2 months was found to increase survival, regardless of the storage temperature. The sex ratio of leafcutter bee adults averages 65:35 (males to females) over all storage conditions.

* * * * *

MATE CHOICE, MALE AVOIDANCE AND "PSEUDOSEXUAL SELECTION" IN THE DAMSELFLY ARGIA VIVIDA

Kelvin F. Conrad

Department of Biological Sciences, University of Calgary, Calgary, Alberta

Argia vivida females occur as conspicuous blue andromorphs and cryptic "red" heteromorphs. Andromorphic females may "pretend" to be males to avoid male harassment or may be seen by males from a greater distance than the heteromorphs, which confers them a mating advantage. Mate choice experiments were performed using marked individuals and live captive females to see if males showed a preference for either morph. To test if female dimorphism was related to male mating activities, male removal experiments were performed. If andromorphs were less or more likely to be mated by males because of their colour, the change in male numbers should have changed the ratio of red to blue mated females. However, males showed no preference for either morph and the removal of males failed to significantly alter the ratio of blue to red mated females. Further observations suggest the dimorphism is involved in male avoidance, but only after an initial mate has been acquired.

* * * * *

NEW PARASITE RECORDS FOR PARDOSA (ARANEIDA: LYCOSIDAE)

Dr. Robin Leech and Mike Caldwell

Department of Entomology, University of Alberta, Edmonton, Alberta
and BioSciences, Northern Alberta Institute of Technology, Edmonton

Two acrocerid larvae of Ogcodes borealis Cole emerged from the bodies of two subadult wolf spider specimens of the genus Pardosa. Just before they emerged, the feeding activity of the fly larvae killed the spiders. All that remained of the spiders were the hollo exoskeletons. In each case, the fly larvae exited through the spider's epigastric furrow.

From a third Pardosa n.sp. female specimen, eight ichneumonids of the genus Gelis n.sp. emerged from the spider's egg sac.

Pictures of the fly puparia, the adult flies, and the ichneumonids, were taken.

* * * * *

REARING CUTEREBRA FONTINELLA IN THE LABORATORY: BREAKING DIAPAUSE

J. Weintraub

In establishing a colony of C. fontinella on Peromyscus leucopus for investigating host-parasite relationships to be applied to cattle grub models, the problem of pupal diapause prevented effective operations. Information is presented on rearing methods and on experiments in manipulating environmental and host conditions. The most effective control of diapause was to maintain conditions of the larvae in the mouse hosts at L:D of 15:9 hours and temperature at 15°-27°C daily. This produced 100% non-diapaused pupae. The reverse conditions (9L:15D) produced 15-25% non-diapaused pupae. Treatments with ecdysterone showed limited success in breaking diapause.

* * * * *

DIFFERENTIAL SIZE VARIATION OF MALE AND FEMALE BUMBLE BEES
(HYMENOPTERA: APIDAE)

R.E. Owen
 University of Calgary, Calgary, Alberta

The theory of polygenic inheritance predicts that, due to haplodiploidy in the Hymenoptera, males should be more variable than females. Variation of radial-cell length in the bumble bee Bombus rufocinctus was examined in a sample of 787 young queens and 680 males. The males (coefficient of variation 5.75%) were significantly more variable ($P < 0.01$) than the females (C.V. - 3.98%). There were also significant ($P < 0.005$) intraclass correlations among male and young queen offspring in colonies, indicating a high degree of phenotypic resemblance between bees of the same case within each colony. However, the heritability estimates for queens $h^2 = 0.02 \pm 0.19$, and males $h^2 = 0.47 \pm 0.38$, have large standard errors suggesting that environmental variation is of the same order of magnitude as genetic variation.

* * * * *

CONTROLLED BREEDING OF THE MOUNTAIN PINE BEETLE,
DENDROCTONUS PONDEROSAE HOPKINS, IN ALBERTA

David Langor
 Department of Entomology, University of Alberta, Edmonton

Mountain pine beetles collected from Lodgepole Pine (LPP) and Limber Pine (LMP) in southwest Alberta were cross-bred in green-cut bolts of LPP and LMP of similar phloem thickness. One pair of beetles of each of the four possible crosses was introduced into each of 30 LPP and 30 LMP bolts. Fifteen bolts of each species were debarked after completion of oviposition (1.5 months) and egg gallery length and number of egg niches (measure of fecundity) measured. Crosses in the other 15 LPP and 15 LMP bolts will be used to calculate brood development rate and mortality. Data are still being collected.

Reproductive success (% of pairs of each cross that produced fertile eggs) was not significantly different between crosses in LPP and LMP, at 85% and 82%, respectively. Crosses in which females were bred with males from the same host species (i.e LMP f X LMP m and LPP f X LPP m) were the most successful in both host species. This suggests that sexual interactions are more important than beetle-host interactions in determining reproductive success.

Fecundity of crosses in LMP did not differ significantly from those in LPP. In general, LMP females were significantly more fecund than LPP females regardless of source of mate. The average number of egg niches/cm of egg gallery length was significantly higher for crosses in LMP, at 2.9, than in LPP, at 2.4. This suggests that LMP may be more nutritious.

* * * * *

COMPLEX STIMULI - SIMPLE RESPONSES: EVIDENCE AND IMPLICATIONS FOR RECOGNITION BY THE COLORADO POTATO BEETLE

Dr. B.K. Mitchell

Department of Entomology, University of Alberta, Edmonton

Work on the physiology of insect chemosensitive systems proceeds on two fronts. Firstly, details of sensitivity and specificity for chemically pure compounds are necessary to at least partially define a system's capabilities and limitations. Secondly, responses of simple chemosensory systems to complex stimuli are evaluated to suggest cellular level explanations for elements of behaviour, and in this case, plant recognition. The galeal chemosensory field of adult Leptinotarsa decemlineata is well suited to the above mentioned approach. Recent work using complex mixtures (plant saps) on this partially defined system led to surprising results. Chemosensory responses of the 3-4 cells/sensillum in this field were markedly simpler than expected when saps of Solanum species were used as stimuli. Saps from non-Solanum species caused a more typical mixed firing pattern from many cells. Possible mechanisms to explain this result and its implications for studies in neural coding will be discussed.

* * * * *

THE WAGNER PROJECT: TERRESTRIAL INVERTEBRATE FAUNA OF A CALCAREOUS PEATLAND

A.T. Finnamore

Provincial Museum of Alberta, Edmonton

The peatland complex in the Wagner Natural Area 6 km west of Edmonton is mixed, with pools, marl flats and carpets of brown moss as well as plants characteristic of alkaline fens giving way to hummocks of sphagnum and other acid tolerant plants especially shrubs and black spruce characteristic of nutrient poor bogs. The resulting mosaic of habitats gives the Wagner Natural Area one of the more uniquely complex floras and probably faunas in the province. In addition, the peatland at Wagner represents the beginning of a successional process that will eventually result in a sphagnum bog formation with acidic conditions and, because of this, any fauna collected in the bog have considerable value in the understanding of faunal succession, if any, that follows the aging of these peatlands. The Wagner Project seeks to provide a terrestrial invertebrate faunal inventory of the peatland and then compare habitats both qualitatively and quantitatively within the peatland and finally, if possible, to compare selected groups in the Wagner Peatland to the usual acidic sphagnum peatlands found across boreal Canada. Results for the faunal inventory are partially available; so far 314 species are known from the peatland, 247 species are Coleoptera although the Staphylinidae have yet to be identified. The Hymenoptera and Diptera will probably both turn out to be more diverse than the Coleoptera giving the Wagner Natural Area a projected terrestrial fauna of over 1000 species.

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**RELATIVE ABUNDANCE OF THE CABBAGE MAGGOT, DELIA RADICUM (L.),
AND THE TURNIP MAGGOT, D. FLORALIS (FALLEN) (DIPTERA: ANTHOMYIIDAE)
IN NORTHERN ALBERTA**

Dr. Graham C.D. Griffiths
Department of Entomology, University of Alberta, Edmonton

The cabbage maggot, D. radicum (L.), is the more abundant species in the northwest agricultural region of Alberta; the turnip maggot, D. floralis (Fallen), in much of the northeast and throughout the Peace River agricultural region. Both species are univoltine in these regions. The pattern of relative abundance is not significantly correlated with air temperatures, but is highly correlated with differences in summer precipitation. The area where D. radicum is predominant has mean June-August precipitation approaching or exceeding 250 mm, while values for the area where D. floralis is predominant are generally lower.

* * * * *

A NEW APHID PROBLEM ON GRAIN IN ALBERTA

A.M. Harper
Research Station, Agriculture Canada, Lethbridge, Alberta

This year, late-seeded cereal grains in southern Alberta were severely damaged by the greenbug, Schizaphis graminum (Rondani). High populations of the aphid were present over most of the area south of Highway 3 to the U.S. border and in some of the area north and northwest of Lethbridge.

About 1,000,000 hectares of grain were infested and about 100,000 hectares were sprayed with dimethoate by air or with malathion by ground sprayers. Some late seeded fields in southern Alberta were ploughed down because damage was severe before the aphids were noticed.

Although the aphid was first found in Alberta over 50 years ago, there is no evidence that it can overwinter in the province. Normally the insect is an annual problem only in the southern United States and is believed to be carried into western Canada by weather systems from the south. Prior to 1986 the insect has never developed populations in Alberta that warranted control.

The aphids suck nutrients from the plants and inject a toxic salivary fluid which damages the leaves, retards root growth, and causes stunting, abnormal tillering, and improper filling of the head.

The greenbug problem in Alberta was associated with later-than-normal planting of grain, early appearance of a heavy migration, and subsequent weather that favored a large buildup of aphid populations.

This greenbug infestation in 1986 was the worst aphid infestation on grain in Alberta since 1956 when the corn leaf aphid, Rhopalosiphum maidis (Fitch), destroyed an estimated 109,000 hectares of late planted barley in the province.

* * * * *

PHYLOGENETICS AND PHENETICS IN THE STUDY OF A WASP GENUS,
SATHON MASON (HYMENOPTERA: BRACONIDAE)

Daryl J. Williams

Department of Entomology, University of Alberta, Edmonton

The known species of the parasitic wasp genus Sathon Mason are examined for evolutionary relationships and degree of phenetic similarity. Phylogenetic relationships among species are analysed by the use of cladistics, while phenetic similarities are measured by the use of the TAXMAP program, a sophisticated, computer-operated program available on the University of Alberta mainframe. Several interesting points are found in both congruence and non-congruence between the methods when their results are compared. Several interesting features in the evolution of this genus are revealed by this comparison.

* * * * *

DISPERSAL AND FORAGING PATTERNS OF EUROPEAN CORN BORER
(OSTRINIA NUBILALIS) LARVAE

David A. Lee

Halkirk, Alberta

Ostrinia nubilalis larvae were monitored for dispersal and microhabitat selection after hatching, throughout growth, and during diapause. Most newly hatched larvae travelled to the ligule by one of three dispersal routes, within 15 to 17 minutes. 39% of larvae died in 7.5 degree-days, from dessication, drowning, or from dropping to the ground. Larval drop was a means of dispersing to lower leaves, and drop rate was related to amount of time spent on the leaf edge/tip.

Colonization of corn plant nodes was heaviest in the mid-section and in the tassel, and was completed by the early instars. Early instar larvae preferred feeding on tassel buds to the upper nodes, and upon ear buds when available. Early instar larvae fed on a wider range of food items than did later instars; these differences were likely due to dietary preferences. Stalk feeding did not begin until the third instar. Changes in resource utilization were described for each larval instar in terms of degree-days from hatching.

84% of mature diapausing larvae left the original host plant, and dispersal decreased exponentially as dispersal distance increased. Larval survival was 39% higher for dispersal along rows than between rows, suggesting that ground predators affect mortality. Dispersal during all larval stages was summarized by a flow diagram.

* * * * *

HYPODERMA INFESTATIONS IN HORSES

J.W. Weintraub

Hypoderma infestations were a problem on cattle ranches by damage from saddles chafing warbles and forced ranchers to carry 10-15% excess working horses. For IPM of cattle grubs we wanted to determine if infested horses were a reservoir that would affect organized control. We also wished to compare their resistance with that of cattle. Six horses were infested with H. lineatum larvae and H. bovis eggs. The grub populations and survivors were compared with similarly infested cattle.

Horses permitted 70% fewer larvae to survive the first-instar migration than did cattle. Then they killed off the older larvae in the warbles by absorbing or expelling them, mainly in the second instar. Cattle permitted about half of the grubs in warbles to mature, pupate and produce warble flies.

Survey results suggested that horses are accidentally infested by association with cattle. The infesting experiment determined that they do not form a reservoir of warble grub populations.

* * * * *

THE TAXONOMIC AND MORPHOLOGICAL DIVERSITY OF WATER MITES FOUND IN ALBERTA

Heather Proctor

University of Calgary, Calgary, Alberta

Water mites were collected during the spring and summer of 1985 in a survey of 54 lentic and lotic sites in Alberta. 26 of the 45 currently recognized families of water mites occur in this province, comprising 50 of the 300 world genera. Distinguishing characters of common lentic water mites were pointed out, and aquatic researchers were urged to be more specific in their identification of this diverse group when publishing their studies.

* * * * *

SHORE INSECTS ATTRACTED TO CHEMICAL SIGNALS
FROM RIVER AND LAKE WATERS

W.G. Evans

Department of Entomology, University of Alberta, Edmonton

Saline lake water (Wells Lake, Saskatchewan) and chemical compounds evaporating from the water surface (methyl esters of hexadecanoic and 9-octadecenoic acids) invoked positive anemotactic responses in Bembidion obtusidens Fall adults in a wind tunnel. Members of this species reside on the shores of saline lakes. River water (Pembina River, Alberta) produced similar responses in adults of the riparian species, Bembidion interventor Lindroth. These results suggest that long distance attraction to shore habitats is mediated by perception of chemical signals originating in adjacent waters.

* * * * *

Lunch with Leech, Drouin , Cereske, et al.			et al.			T. Erwin K. Ball G. Ball J. Weintraub		
Craig & Nimmo inter alia		as stated		B. Mitchell	A. Finnamore	G. Griffiths	this button stupid -- --- J. Lacoursiere Griffiths	
H. Philip	G. Ball introducing ---		Terry Erwin Washington, DC		pause that refreshes --		-- and releases	
K. Ball T. Erwin A. Schaaf G. Ball			J. Gurba A. Weintraub C. Shemanchuk D. Sabwa				J. & R. Gurba	
G. Ball T. Erwin R. Leech							E. Mengersen B. Mitchell	
R. Leech Banquet	M. Eymann	A. Harper	D. Williams	D. Lee	H. Proctor K. Conrad		J. Weintraub	M. Zimmermann
H. Proctor	G. Evans	R. Gooding Pres.	A. McClay Sec'y	C. Hergert	G. Hilchie	J. Shemanchuk	pine beetle??	evil eye



34th ANNUAL MEETING - EDMONTON
1986 - PROVINCIAL MUSEUM

coffee	of distant origin		overview		
			there is no other	Orthoarachnid	
Bambi	for books				
K. Ball	as I was saying --	-- I lied	B. Schaber	two of the same	
H. Philip	B. Heming	B. Heming	Masayuki Usui		
			K. Richards		
D. Craig	A. Finnamore		H. Philip	B. Heming	B. Taylor
H. Proctor					C. & J. Shemanchuk
	J. Drouin		A. Finnamore	E. Eymann	P. Schole- field
W. Barr		R. Wong		larvae down here	and trap
trap goes in here --- on with the bull	J. Byers	R. Anderson	K. Richards	K. Conrad	R. Leech
J. Weintraub	a cute rebra	R. Owen	a pair	J. Shemanchuk L. Peterson J. Weintraub	

MINUTES
ENTOMOLOGICAL SOCIETY OF ALBERTA
EXECUTIVE MEETING

Date: Saturday, 26 April 1986

Place: Athabasca Annex Room 66, University of Alberta Campus.

Present: Doug Craig, Jim Drouin, Ron Gooding (Chair), Colin Hergert, Gerry Hilchie, Alec McClay, Ernest Menyersen, Bev Mitchell, Jim Ryan, Burt Schaber.

1.0 Call to Order

- meeting called to order at 10:00 a.m.

2.0 Approval of Agenda

MOTION: That the revised Agenda be approved as circulated. Mitchell - McClay. **CARRIED.**

3.0 Adoption and Review of Minutes

3.1 MOTION: That the Minutes of the Executive Meeting of 17 October 1985 be adopted. Schaber - Hilchie. **CARRIED.**

3.2 A.G.M.

Minutes of the A.G.M. on 19 October 1985 were reviewed in preparation for their inclusion in the Proceedings.

4.0 Business Arising from Previous Meetings

4.1 Executive Meeting 17 October 1985

4.1.1 Craig reported that the insect boxes have been ordered and have arrived. Mitchell will check whether the buying and selling of the boxes can be handled entirely by the Department of Entomology in the future to reduce paperwork.

4.1.2 Awards Committee

Craig reported that the scroll has been presented to Andrew Liew.

4.1.3 Joint Meeting with E.S.C. in 1991

Craig reported that an invitation has been sent to the Entomological Society of Canada for this meeting. No reply has been received yet. He will check with E.S.C.

4.1.4 Plant Pathology Society of Alberta

Drouin has communicated the decision about the venue for our Annual Meeting to the Plant Pathology Society of Alberta and will send them a copy of the E.S.A. membership list.

4.2 A.G.M. 19 October 1985

4.2.1 E.S.C. Scholarship Fund

The \$500 donation plus a \$5 anonymous contribution has been sent to the E.S.C. Scholarship Fund. Two scholarships will be awarded this year.

4.2.2 CanaColl Foundation

The \$200 donation to the CanaColl Foundation has been made and is being placed in their development fund.

4.2.3 Secretary-Treasurer Position

McClay and Hilchie to report to the August Executive Meeting on the sharing of duties for the Secretary-Treasurer position. A decision will be made at that time on whether to send out notice of motion to formalize the split at the 1986 A.G.M.

4.2.4 New Honorary Member

Gooding asked executive members to consider possible candidates for election as another Honorary Member and to suggest names at the next executive meeting.

4.2.5 Insect Collection Competition

Hergert will send out information on the insect collection competition soon to the Universities and Olds College.

5.0 Treasurer's Report

An interim financial report was presented by Hilchie for information. The 1985 financial statement has been approved by the auditors.

6.0 Editor's Report

A report of the progress of the 1985 Proceedings was received from Charnetski. Authority was requested for publication of the 10-year indices as completed. MOTION: That Charnetski and Hergert complete the index for Volumes 11 to 30 and that the indices be published in separate 10-year sets as completed. Craig - Drouin. CARRIED.

7.0 Secretary's Report

Several items or correspondence were presented.

A membership report prepared by Holmberg was circulated.

8.0 Annual Meeting

The Provincial Museum was suggested as a possible venue for the meeting. Bruce Taylor has offered to co-ordinate local arrangements. The possibility of holding a symposium as part of the meeting, with a distinguished invited speaker, was discussed. "Computer, Entomology and Education" was suggested as a possible symposium theme. Gooding and Craig to appoint organizing committee for the meeting. Date of the meeting to be decided by organizing committee depending on availability of venue.

9.0 Other Business

9.1 By-laws, Rules and Regulations

McClay and Gooding to ensure that by-laws, rules and regulations have been updated to reflect all changes made by past A.G.M.'s.

9.2 Rationalization of Committees

All executive members to consider what changes should be made to the Society's committees in order to clarify their terms of reference, methods of election, and whether any of their functions could be reassigned back to the Executive Committee. Suggestions to be made to Gooding before the next executive meeting.

10.0 Adjournment: 12:05 p.m.

MINUTES
ENTOMOLOGICAL SOCIETY OF ALBERTA
EXECUTIVE MEETING

Date: Saturday, 16 August, 1986.

Place: Athabasca Annex Room 66, University of Alberta Campus.

Present: Bert Finnamore, Ron Gooding (Chair), Colin Hergert, Gerry Hilchie, Alec McClay, Ernest Mengersen, Bev Mitchell, Jim Ryan, Burt Schaber. Apologies were received from Doug Craig and Jim Drouin.

1.0 Call to Order

- meeting called to order at 10:40 a.m.

2.0 Approval of Agenda

The Agenda was approved as circulated with the addition of a few items under Other Business.

3.0 Adoption and Review of Minutes

MOTION: That the Minutes of the Executive Meeting of 26 April 1986 be adopted. Ryan - Schaber. CARRIED.

4.0 Business Arising from Previous Meetings

4.1 Appointment of Committees for Annual Meeting

Gooding reported that Bert Finnamore had been appointed to the Scientific Program Committee and was being assisted by Jean LaCoursiere and Markus Eymann, and that Bruce Taylor had been appointed to co-ordinate the local arrangements.

4.2 Report of the Scientific Program Committee

Finnamore reported that Dr. Terry Erwin had been obtained as the invited speaker for the Annual Meeting, and would give a talk on Community Diversity in Rain Forest Canopies. The facilities of the Provincial Museum are being provided free of charge. Some submitted papers have already been received.

MOTION: That Finnamore and Hilchie be authorized to purchase an air ticket for Dr. Erwin for the purpose of travel to the Annual Meeting. Mitchell - Schaber. CARRIED.

4.3 Report of the Local Arrangements Committee

Finnamore, on behalf of Taylor, reported that arrangements are being made for a reception at the Museum on Thursday evening, a lunch on Friday and a banquet on Friday evening. Robin Leech will be asked to be the banquet speaker. Registration for the Meeting will be \$10 and the cost of the banquet will be \$15. The Museum will print the program leaflets.

Mitchell suggested that a Photo Salon be half as part of the meeting. After some discussion it was decided that a non-competitive photo display should be arranged which might lead to a competitive salon at future meetings.

MOTION: That Finnermore and McClay make arrangements regarding the format for, and announcement of, the photo display. Hergert - Mitchell. CARRIED.

There was also some discussion of publicity for the meeting. It was agreed that Hilchie would contact the Federation of Alberta Naturalists to suggest an announcement in their newsletter and that McClay would investigate the possibility of an announcement on the CBC Radio Community Billboard.

4.4 **Sale of Insect Boxes**

Mitchell reported that the buying and selling of insect boxes is now being handled entirely by the Department of Entomology and that the Society is no longer involved. Items available are as follows: Insect nets @ \$17.50; display boxes @ \$6.80; foam inserts for display boxes @ \$2.00; #2 and #3 insect pins @ \$1.70 per 100; and the Guide for Insect Collectors @ \$0.25.

4.5 **Joint Meeting with E.S.C. 1991**

Gooding reported on behalf of Craig that our invitation has been accepted subject to confirmation at E.S.C.'s Annual Meeting in October.

4.6 **Plant Pathology Society Meeting**

Drouin has sent a copy of the E.S.A. membership list to the Plant Pathology Society.

4.7 **Secretary-Treasurer Position**

Hilchie and McClay reported that no problems had been experienced with the split in the Secretary-Treasurer functions and recommended that the split be made permanent (see Minute 4.10 below).

4.8 **New Honorary member**

(See Minute 5.0 below.)

4.9 **Index for Volumes 11 to 30**

Hergert reported that the index for Volumes 21 to 30 of the Proceedings is in press and should be available to be distributed with the 1985 Proceedings; Volumes 11 to 20 will follow at a later date.

MOTION: That Hergert be reimbursed for telephone data transmission costs related to production of the indices. Ryan - Mitchell. CARRIED.

4.10 **By-Laws, Rules and Regulations**

After lengthy discussion, Council agreed to recommend a package of amendments to the By-Laws, Rules and Regulations with the aims of (a) implementing the split in the Secretary-Treasurer position, (b) clarifying some of the confusion resulting from the amendments which were passed at the 1981 Annual Meeting but never incorporated into the By-Laws, Rules and Regulations as printed in the Proceedings, and (c) modifying the composition and duties of some of the Society's standing committees. (See the attached Notice of Motion.)

MOTION: That the Council recommend to the membership acceptance of the changes to the By-Laws, Rules and Regulations contained in the attached Notice of Motion. Mitchell - Hilchie. CARRIED.

5.0 Treasurer's Report

An interim financial report was presented by Hilchie. A check of the membership records revealed that the Society has 5 Honorary Members, which is the maximum at present allowed by the By-Laws. There is therefore no vacancy for a new Honorary Member as was previously thought.

6.0 Secretary's Report

The Call for Papers has been mailed out. There was no correspondence requiring action by Council.

7.0 Other Business

7.1 Appointment of Regional Director to E.S.C.

Craig's term of office as Regional Director to E.S.C. will expire at the end of the E.S.C. Annual Meeting in October, while a new regional director will not be elected until the E.S.A. Annual Meeting in November. We will, therefore, in theory be without a regional director to represent us at the E.S.C. Board Meeting to be held after the close of the E.S.C. Annual Meeting in October.

MOTION: That Craig continue to represent E.S.C. at this Board Meeting and that the new regional director take over after his election in November. Hergert - Mengersen. CARRIED.

7.2 Insect Collection Competition

Hergert reported that notices have been sent out to the Universities and Colleges.

7.3 Next Executive Meeting

The next meeting will be held on November 6 in the afternoon.

8.0 Adjournment: 1:20 p.m.

MINUTES
ENTOMOLOGICAL SOCIETY OF ALBERTA
EXECUTIVE MEETING

Date: Thursday, 6 November, 1986.

Place: Lecture Room Provincial Museum of Alberta, Edmonton.

Present: Doug Craig, Jim Drouin, Bert Finnamore, Ron Gooding (Chair), Colin Hergert, Gerry Helchie, Alec McClay, Ernest Mengersen, Bev Mitchell, Jim Ryan, Burt Schaber.

1.0 Call to Order

- meeting called to order at 5:30 p.m.

2.0 Approval of Agenda

The Agenda was approved as circulated with the addition of a few items by the President.

3.0 Adoption and Review of Minutes

MOTION: That the Minutes of the Executive Meeting of 16 August 1986 be adopted. Craig - Schaber. **CARRIED.**

4.0 Business Arising from Previous Meetings

4.1 Photo Salon

The Photo Salon has been publicized and a number of entries received. It was agreed that in future an announcement should be sent out earlier in the year.

4.2 Publicity for Annual Meeting

Hilchie reported that the Federation of Alberta Naturalists requires copy by March for its September newsletter. McClay reported that an announcement of the meeting and the keynote talk had been given on CBC radio. It was suggested that for future meetings some money might be allocated for publicity and that the Edmonton Journal science editor be contacted.

4.3 Joint Meeting with E.S.C.

Craig reported that the joint meeting of E.S.A. and E.S.C. in 1991 was confirmed. He reminded the executive that under Rule 4(c) an ESA-ESC Joint Meeting Committee must be established one year preceding any joint meeting of ESC and the Society.

4.4 Index for Volumes 11-30

The editors have received the indexes for Volumes 21 to 30 of the Proceedings. There have been problems localizing Volumes 11 to 20 because of the renovations in the Department of Entomology.

5.0 Treasurer's Report

Hilchie presented an interim financial and membership report.

6.0 Secretary's Report

McClay reported that the 1985 Proceedings had been mailed out to all members together with the Notice of Motion of the proposed By-Law changes and the Photo Salon announcement.

7.0 Editor's Report

Mengersen reported that arrangements for the printing of the indexes for Volumes 11 to 20 were being discussed with the print shop at Olds College. Schaber reported that Charnetski had asked him to convey his thanks to the Executive for their support during his period as editor. It was agreed that a letter of appreciation be sent to Charnetski for his service as editor. Craig asked why the traditional green cover of the Proceedings had been changed to yellow. The reasons seem to be best known to the printers at Athabasca University. However it was agreed that now that the change had been made we should stick to yellow for a few years.

8.0 Report of the Meeting Committees

Taylor and Finnamore reported that arrangements for the forthcoming Annual Meeting were well in hand. A book has been purchased as an honorarium for the banquet speaker. It was reported that some members had been unable to obtain the special room rate which had been offered to delegates by the Holiday Inn. Taylor agreed to look into this.

9.0 New Business

9.1 Location and Date of the 1987 Annual Meeting

Drumheller was suggested as a possible site. Gooding volunteered to contact Ted Pike about local arrangements.

9.2 Profiles of Alberta Entomologists

McClay read a letter from Dr. Paul Riegert of the University of Regina, requesting the Society's involvement in a project to publish a booklet of profiles of "Entomologists of Alberta". Costs of publication would be shared 50% by E.S.C.

MOTION: That a subcommittee chaired by Mengersen be struck to recommend the Society's response to this request and to decide on details of format. Craig - Mitchell. CARRIED.

9.3 Friends of the Provincial Museum

MOTION: That an honorarium of \$300 be awarded to the Friends of the Provincial Museum for providing catering services to the Annual Meeting. Hergert - Craig. CARRIED.

9.4 Amendments to By-Laws, Rules and Regulations

Gooding reminded the executive that these changes would be moved as two separate motions at the Annual Meeting. Mitchell and Craig respectively agreed to move and second both motions.

9.5 Invitation to President of E.S.C.

Gooding reported that it is customary for provincial Societies to invite the President of E.S.C. to attend their Annual Meetings. He has sent an invitation to Dr. Scudder and reminded the Executive that this should be an item of business for future August Executive meetings.

9.6 Nominations Committee

Drouin reported that all places on the slate had been filled except for Regional Director.

10.0 Adjournment: 7:00 p.m.

MINUTES
ENTOMOLOGICAL SOCIETY OF ALBERTA
ANNUAL MEETING

Date: Saturday, 8 November, 1986.

Place: Auditorium, Provincial Museum of Alberta, Edmonton.

1.0 Call to Order

The meeting was called to order at 11:40 a.m. by R.H. Gooding. There were 34 members present.

2.0 Approval of Agenda

MOTION: That the Agenda be approved. B. Taylor - G. Evans. CARRIED.

3.0 Adoption of Minutes

MOTION: That the Minutes of the 1985 Annual Meeting be adopted. G. Ball - J. Drouin. CARRIED.

4.0 Greetings from E.S.C.

G. Ball presented greetings to the Society on behalf of Dr. Scudder, President of the Entomological Society of Canada.

5.0 Reports of Officers

5.1 Treasurer's Report

An interim financial and membership report was circulated by Hilchie (see attached audited report). The Society has 124 paid-up members of which 75 are registered at the Annual Meeting.

MOTION: That the Treasurer's Interim Report be accepted. G. Hilchie - G. Ball. CARRIED.

5.2 Editor's Report

E. Mengersen presented a brief verbal report and thanked W. Charnetski and W. Nelson for their help.

MOTION: That the Editor's Report be accepted. E. Mengersen - H. Philip. CARRIED.

5.3 Meeting Committee's Report

B. Taylor reported that arrangements for the meeting had gone smoothly and thanked Ted Smith and Vicky Fannon of the Provincial Museum for their assistance. A. Finnamore suggested that next year announcements for the Photo Salon should be sent out in the spring.

MOTION: That the Meeting Committee's Report be accepted. B. Taylor - A. Finnamore. CARRIED.

5.4 Secretary's Report

A. McClay presented a brief verbal report.

MOTION: That the Secretary's Report be accepted. A. McClay - J. Ryan. CARRIED.

5.5 Regional Director's Report

D. Craig presented a report (see attached).

MOTION: That the Regional Director's Report be accepted. D. Craig - H. Wong. CARRIED.

5.6 President's Report

R. Gooding presented a report (see attached).

MOTION: That the President's Report be accepted. R. Gooding - G. Ball. CARRIED.

6.0 Reports of Standing Committees

6.1 Awards Committee.

No report was received.

6.2 Representative to Environment Council of Alberta

J. Shemanchuk reported on the activities of three E.C.A. study groups on Pollution, Renewable Resources, and the Rural Environment. Three items had been put forward for the Provincial Conservation Strategy on behalf of the Society, referring to the reduction of pesticide use, the preservation of genetic diversity and the preservation of wetlands. He called for input from Society members into E.C.A. discussions.

MOTION: That the report of the E.C.A. representative be accepted. J. Shemanchuk - G. Evans. CARRIED.

6.3 Insect Collection Competition Committee

The 1986 Insect Collection Competition was entered by 37 collections in the Open category and 3 collections in the Youth category. Judging was done by R. Anderson and C. Hergert. The winners were:

Open: First Place	- Diane Sloan
Second Place	- Regina Blum
Third Place	- Donna Drury
Honourable Mentions	- Otto Jerke
	- Denise Dumbeck
	- Susan Schneider

Youth: First Place	- Jeromy Kerr
Honourable Mentions	- Douglas M ^C Cauley
	- Atis Meuhlenbachs

MOTION: That the report of the Insect Collection Competition Committee be accepted. C. Hergert - J. Drouin. CARRIED.

6.4 Resolutions Committee

MOTION: Whereas the success of the 34th Annual Meeting of the E.S.A. can, to a large extent, be attributed to the following, be it resolved that letters of appreciation be sent to:

- (a) Dr. Terry Erwin, Smithsonian Institution, Washington, D.C., for his very stimulating presentation on Biodiversity in Tropical Forest Ecosystems, particularly his trials, tribulations, and successes in sampling the tree top canopy and his sharing of concerns about environmental degradation in tropical ecosystems.
- (b) Dr. Robin Leech, Biosciences N.A.I.T. and U. of A. for his after-dinner presentation on Canada's newest proposal for a National Park, namely northern Ellesmere Island, N.W.T., and in particular, his reminiscences of experiences while living at Lake Hagen and opinions for justification of the National Park.

- (c) Mr. John Fortier, Director, and Dr. P.H.R. Stepney, Assistant Director, Natural History, Provincial Museum of Alberta, for providing the facilities of the Provincial Museum in which this meeting was held.
 - (d) Bruce Taylor, Bert Fillamore, and Jock McIntosh of the Edmonton Organizing Committee for their dedicated efforts to organize and arrange the Annual Meeting.
 - (e) Bill Nelson for the many photographs he has taken of the members and their activities for inclusion in the Proceedings.
 - (f) Vicki Fannon, Special Events Co-ordinator; Ted Smith, Visitor Services Co-ordinator; and the Friends of the Provincial Museum of Alberta for assisting with arrangements for the meeting.
- K. Richards - J. Haley. CARRIED.

7.0 New Business

7.1 Changes to By-Laws and Rules & Regulations

MOTION: That the By-Laws of the Society be amended as shown on the Notice of Motion which has been duly circulated to the membership. B. Mitchell - D. Craig.

AMENDMENT: That the word "General" be deleted from Article VII, paragraph 4. B. Heming - G. Evans.

CARRIED AS AMENDED.

MOTION: That the Rules and Regulations of the Society be amended as shown on the Notice of Motion which has been duly circulated to the membership. B. Mitchell - D. Craig. CARRIED.

7.2 Profiles of Alberta Entomologists

MOTION: That the Society supports in principle the project to publish a booklet of Profiles of Alberta Entomologists, jointly with the Entomological Society of Canada. B. Taylor - J. Jones. CARRIED.

E. Mengersen has been appointed to work out the details of the project.

7.3 Report of the Nominations Committee

The following were nominated: B. Mitchell for President, C. Hergert for Vice-President, A. McClay for Secretary, G. Hilchie for Treasurer, E. Mengersen for Editor, P. Scholefield for Director from Calgary, and J. Spense for Regional Director to E.S.C.

MOTION: That the report of the nominations Committee be accepted. B. Mitchell - D. Craig. CARRIED.

MOTION: That nominations cease. G. Ball - B. Taylor. CARRIED.

7.4 Next Annual Meeting

It was agreed that the possibility of holding the next Annual Meeting in Drumheller would be investigated.

7.5 Gift of XVIII International Congress of Entomology

MOTION: That the Society make a gift of \$2000 (Two thousand dollars) to the Organizing Committee of the XVIII International Congress of Entomology, to be held in Vancouver, B.C., in 1988. H. Philip - J. Drouin.

There was considerable discussion on this motion. J. Shemanchuk said that it would only be a drop in the bucket for the Congress. G. Ball said that support would be timely as funding was not yet assured from the B.C. Government and money was needed now for the initial mailing. B. Taylor said that the Society was in good financial shape and could afford the proposed donation. J. Gurba and A. Harper urged caution in the spending of the Society's funds.

Votes were cast as follows: 17 for, 10 against. CARRIED.

7.6 Thanks to Executive

On behalf of the membership, G. Ball thanked the Executive for their work during the year.

8.0 Adjournment; 1:30 p.m.

PRESIDENT'S REPORT 1986

The By-laws, Rules and Regulations of the Entomological Society of Alberta define, among other things, the duties of the President. As outlined in the By-laws, the work load of the President is very light. It is the other members of the Council, and those appointed to certain committees who carry out the day-to-day business of the Society. I was delighted by the extremely light work load which I have as President and I thank the other members of the council, members of various committees, and those who have represented the interests of our Society for making my job as President so easy and so enjoyable.

During this business meeting reports have been, or will be, presented by members of the council and by others who have represented the Society in various capacities during the past year. I will not attempt to summarize these activities but will deal with two other items. The first is yet another review of our By-laws, Rules and Regulations. The second is a personal appraisal of the status of the Entomological Society of Alberta and a bit of a challenge to the Society.

During the past year the Society, on an experimental basis, divided the duties of the Secretary and Treasurer. Partially as a result of this is necessary for the E.S.A. Council to review our "By-laws" and our "Rules and Regulations". This review resulted in a number of proposed changes and the membership was advised of these, by mail, several weeks ago. Later in this meeting there will be an opportunity for the membership to discuss and vote upon these changes. Since I shall be chairing the meeting and therefore should not enter the debate, I shall now attempt to sway your vote by pointing out the reasonableness of the proposed changes.

As you know, the By-laws, Rules and Regulations of the Society have been amended from time to time. Unfortunately five years ago we made a small error which may have accidentally wiped out the earlier changes. We did this by passing an omnibus resolution adopting some number of amendments "as circulated". Unfortunately the Proceedings did not list these changes and the By-laws and the Rules and Regulations that we published were an old version. It is thus a moot point as to whether we'd introduced a number of progressive changes or whether we were overwhelmed with nostalgia and turned the clock back. The E.S.A. Council in proposing the changes which were mailed to you is attempting to re-instate some earlier changes and to streamline the operation of the Society by having each of the major committees the responsibility of a member of the Council.

I turn now to a few personal impressions about the state of our Society. The size of our Society has remained relatively constant for several years. I think that there are opportunities to bring additional members into the Society and one step towards this will be presented as part of re-defining the roles of the Vice-President and Ordinary Directors which you will be asked to approve later in the meeting.

Our Society has members with diverse interests. We could thus be considered a faunistically rich and diverse Society. Compared to other regional entomological societies in Canada we are relatively well off financially. In the past we have seen fit to share some of our financial well-being through donations to the Scholarship Fund of the E.S.C. I hope that we will continue to do this from time to time.

I will draw your attention to two other E.S.C. projects which are of special interest to our Society. The first is the publication of a series of booklets presenting profiles of Canadian entomologists. The project is being organized on a region by region basis with the E.S.C. financing half the publication costs. Paul Riegert is co-ordinating the project and he hopes that booklets covering the four western regional societies can be completed before mid-1988. If this project is to be successful it is going to require an input of both finances and information from this and other regional societies. In this respect I will remind you that a year ago the major symposium of this Society's meeting dealt with the history of entomology in Alberta. Co-operation in production of a booklet on Alberta entomologists would complement that symposium by helping to document Alberta entomologists and their activities.

The last of the projects which I wish to mention is the XXVIII Congress of Entomology. At our meeting in Penticton in 1983 we passed a resolution encouraging the E.S.C. to offer to host this Congress. In fact we were so bold as to recommend that the Congress be held in Alberta. As you know, the E.S.C. invitation was accepted and the Congress will help held in July 1988 in Vancouve. We in Alberta are among those for whom attendance at the Congress will represent a relatively minor financial burden. Since members of our Society as in such an enviable position to benefit from the Congress and since our Society encouraged the E.S.C. to host this Congress, perhaps we ought to consider contributing financially to the organization of the Congress. Even a relatively small contribution could have a significant effect during the crucial early stages of organizing and advertising the Congress.

If you re-examine the Reports of previous Presidents of this Society you will find a variety of messages. Mine is a very simple one: for a small non-profit organization we have more than enough money to meet our foreseeable needs. Let's put some of the excess to good use to foster various aspects of entomological scholarship.

Ron Gooding,
President,
E.S.A., 1986

ENTOMOLOGICAL SOCIETY OF ALBERTA

NOTICE OF MOTION

The Council of the Society has agreed to recommend the following amendments to the Society By-Laws, Rules and Regulations for approval by the membership at the Annual Meeting in Edmonton, November 6-8, 1986. Changes to the By-laws require the approving vote of three-quarters of the members present and in good standing at the Annual Meeting. Changes to the Rules and Regulations require approval by a simple majority of the members present at any general meeting.

By-Laws

Article V - Officers

Delete "Secretary-Treasurer" and substitute "Secretary, Treasurer".

Article VI - Council

Delete "four" and substitute "five".

Article VII - Elections

Paragraph 2. Delete "formerly" and substitute "normally". Delete "Secretary-Treasurer" and substitute "Secretary, Treasurer".

Paragraph 4. Delete entire paragraph and substitute:

"The Regional Director shall be elected for a period of three years, with his 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."

Article IX - Duties of Officers

Paragraph 2. After the words "exercise the powers of the President", insert ", shall chair the Science Fair Liaison Committee and the Membership Committee".

Paragraph 3. Delete entire paragraph and substitute the following two paragraphs:
"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."

Article X - Signing Officers

Delete entire article and substitute:

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

Rules and Regulations

2 (a)

Delete "Secretary-Treasurer" and substitute "Treasurer".

2 (b)

Delete "appointed" and substitute "elected".

4 (a)

Delete entire paragraph and substitute:

"Awards Committee - members: Past President (as chairman), Regional Director to ESC, and three Ordinary Directors. Duties - to solicit to generate nominations as ESA members for ESC awards (e.g. Gold Medal, Gordon Hewitt, Norman Criddell) and ESA awards (e.g. Honorary Membership)."

4 (f)

After the word "appointed" insert "by the Nomination Committee".

4 (g)

Delete entire paragraph and substitute:

"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."

4 (h) (new)

Add:

"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."

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 people 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

The Officers of the Society shall consist of a President, Vice-President, Secretary, Treasurer, and Editor. 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 Offices 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 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 and 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.

RULES AND REGULATIONS

ENTOMOLOGICAL SOCIETY OF ALBERTA

1. a. The annual fee for full membership shall be \$4.00.
- b. The fiscal year of the Society shall coincide with the 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.
- 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 Socoeity 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 Criddell) 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 preceeding 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 preceeding 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.

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.

November, 1986

ENTOMOLOGICAL SOCIETY OF ALBERTA

FINANCIAL STATEMENT

January 1 through December 31, 1986

Credits

Bank assets, December 31, 1985	\$10,040.74	
Memberships		
1988 (1 @ \$4.00)	4.00	
1987 (88 @ \$4.00)	352.00	
1986 (40 @ \$4.00)	160.00	
1985 (2 @ \$4.00)	8.00	
Exchange, 2 transactions	2.99	
Library subscriptions (7 @ \$6, plus exchange)	47.13	
Subtotals for memberships	\$ 574.12	\$ 574.12
Annual Meeting 1986		
Registrations (65 @ \$10.00)	760.00	
Banquet (62 @ \$15.00)	930.00	
Subtotals for Annual Meeting	\$ 1,690.00	\$ 1,690.00
Miscellaneous		
Bank Interest	\$ 542.04	
Grant from Ent. Society of Canada for amateur entomology (1984, 1985 & 1986)	600.00	
Money received, no receipt (at Annual Meeting)	4.00	
Subtotals for miscellaneous	\$ 1,146.04	\$ 1,146.04
Total Receipts		\$13,450.90

Expenditures

Proceedings		
Printing, 1985	\$ 612.53	
Distribution, envelopes, postage	238.92	
Photography honorarium, 1986	150.00	
Photographic supplies	27.93	
Subtotals for Proceedings	\$ 1,029.38	\$ 1,029.38
Annual Meeting, 1985		
Insect collection prizes (1 - 1st, 2 - 2nds, 1 - 3rd, 2 book prizes)	\$ 172.59	
Balance of expenses	148.26	
Subtotal for 1985 Meeting	\$ 320.85	\$ 320.85

Executive Meetings		
Teleconference (1985)	\$ 90.00	
Travel claims, April (1986)	238.00	
Travel claims, August (1986)	126.10	
Travel claims, November (1986)	<u>61.00</u>	
Subtotal for Executive Meetings	\$ 515.50	\$ 515.50
Annual Meeting, 1986		
Banquet	\$ 665.00	
Book for after dinner speaker	39.95	
Reception	286.87	
Donation to "Friends of the Provincial Museum"	300.00	
Travel for keynote speaker (from Washington, D.C.)	963.72	
Insect collection prizes (2 - 1st, 1 - 2nd, 1 - 3rd, 2 book prizes)	<u>167.92</u>	
Subtotal for Annual Meeting	\$ 2,423.46	\$ 2,423.46
Miscellaneous		
Bank service charges	\$ 7.90	
Cheques	7.50	
Postage	66.66	
Photocopy charges	37.05	
Receipt books	9.60	
Electronic data transfer (indexing proceedings)	38.17	
Donation to Ent. Soc. of Canada Scholarship Fund (1985)	<u>2,000.00</u>	
Subtotal miscellaneous	\$ 2,671.88	<u>\$ 2,671.88</u>
Total Disbursements		\$ 6,961.07

Balance Summary

Bank Assets (December 31, 1986)	\$ 6,489.83
Total Disbursements	<u>6,961.07</u>
Grand Total	\$13,450.90

Gerald J. Hilchie,
Treasurer.

REPORT OF THE REGIONAL DIRECTOR
ENTOMOLOGICAL SOCIETY OF ALBERTA

As Regional Director of the Entomological Society of Alberta, I attended the Entomological Society of Canada Governing Board Meetings, October 4 and 5, and then, since my term of office had expired, as your informal representative at the new Governing Board Meeting, October 8th, 1986, at the Holiday Inn South, Winnipeg.

Annual Meeting

The 1986 Annual Meeting of the Entomological Society of Canada was held jointly with the Entomological Society of Manitoba. Again of note were the competition sessions of presentations by graduate students. The quality of presentations was extremely high and personal choices of winners difficult.

There were 140 entomologists in attendance, with a high proportion of graduate students.

Future Meetings

1987. The Entomological Society of Canada, the Entomological Society of British Columbia and the Entomological Society of Washington, will hold a joint meeting, September 28 - 30, Delta Lakeside Motel, Penticton. Organization is well underway.

1988. International Congress of Entomology, University of British Columbia, July 3-9. Organization is well underway. A preliminary budget of some \$1.5 million has been structured. It is estimated that there will be 3500 attending and with fees set at \$200, approximately \$200,000 will have to be raised for granting agencies. Although this appears to be a large sum of money, the organizing committee feels it is not unreasonable. Fourteen subject sections have been proposed and 27 special symposium topics have been received. The Congress logo has been chosen and is a Haida Indian design depicting the relationship of insects to other organisms. It will lend itself very well to lapel pins and T-shirts. There is a possibility that there may be a stamp stuck with an entomological theme. Whether this would be especially for the Congress was not definite. Space in student residences and hotels has been reserved, and official carries established. The first circular will be mailed before Christmas, 1986.

1989. Entomological Society of Canada and Acadian Entomological Society, joint meeting in St. John's, Newfoundland.

1990. Entomological Society of Canada will participate in the Biological Council of Canada Congress, Laval University, May 28-30.

1991. Entomological Society of Canada and Entomological Society of Alberta, joint meeting.

Publications

Canadian Entomologist - The new Scientific Editor, Dr. A.B. Ewen, reported that production of the Canadian Entomologist proceeds smoothly and that this years' volume will be approximately the same as last year. However, the size of the memoirs is growing and causing a problem for the Managing Editor in Ottawa in regards to copy editing. The editor expressed satisfaction with the position.

Bulletin Editor - The new Bulletin Editor, Dr. R.B. Aiken reported that delays in production were caused by change-over of editor, late submissions and problems with getting translations done. These problems have in part been resolved. The high cost of the Bulletin was discussed and a visit to the printer was made while in Winnipeg. A small reduction in page size of the next volume of the Bulletin may result in savings of over 25% in printing costs.

A report of a Special Committee of the Science Policy Committee of the Entomological Society of Canada: Microbial Insecticides: Their registration and use in Agriculture, Forestry and Public and Animal Health, has been published and distributed to all members. A problem with the galley proofs led to sections of text being misplaced and this will be rectified via replacement pages.

Canadian Phytopathological Society - The Canadian Phytopathological Society approached the Entomological Society of Canada regarding publication of a book on disease and pests of fruits and vegetables in Canada. This publication would be a companion volume to the Canadian phytopathological Society's very successful **Diseases of Field Crops in Canada**. The Entomological Society of Canada agreed to proceed with the venture.

Finances

As usual, the Treasurer brought in a budget with a deficit, but the Society is in good financial health. Of major concern was a sudden drop in the number of memberships in the Society, from 1038 to 870. It was decided to approach those members not renewing memberships for their reasons not to do so. It was generally felt that membership drives were of little use, but that individual efforts had more effect.

Awards

Scholarships

Susan Fraser, Department of Biology, University of Waterloo.

Hewitt Award: No award this year.

Gold Medal: Dr. E.J. LeRoux.

Fellows: Dr. D.L. Struble
Dr. L. Safranyik

Officers

Past President	H.F. Madsen
President	G.G.E. Scudder
First Vice-President	E.C. Becker
Second Vice-President	D.C. Edit
Treasurer	D. Bright
Secretary	J.A. Shemanchuk
New Directors at Large	N.J. Holliday
	I.M. Smith

Respectfully submitted,
Douglas A. Craig,
Regional Director,
Entomological Society of Alberta.

LIST OF MEMBERS

(Revised March 1987)

Honorary Members

Mr. J.B. Gurba,
9415 - 144 Street,
EDMONTON, AB.
T5R 0R8
Res.: 452-6752

Mr. E.T. Gushul,
1714 - 15 Avenue South,
LETHBRIDGE, AB.
T1K 0W9

Mr. L.A. Jacobson,
1011 - 14 Street South,
LETHBRIDGE, AB.
T1H 2W3

Dr. Ruby I. Larson,
2503 - 12 Avenue South,
LETHBRIDGE, AB.
T1K 0P4

Dr. W.A. Nelson,
1020 Fern Crescent,
LETHBRIDGE, AB.
T1K 2W3
Res.: 327-4736

Members

Cecilia P. Abecia,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Mr. John Acorn,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 488-1080
Bus.: 432-4650

Mr. Robert Anderson,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Dr. G.E. Ball,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 483-4951
Bus.: 432-5487

Dr. Kay Ball,
8108 - 138 Street,
EDMONTON, AB.
T5R 0C9
Res.: 483-4951

Mr. W.B. Barr,
15709 - 89A Avenue,
EDMONTON, AB.
T5R 4T1

Dr. M. Benn,
Department of Chemistry,
University of Calgary,
CALGARY, AB.
T2N 1N4

Mr. Mike Benton,
Department of Biology,
University of Calgary,
2500 University Drive,
CALGARY, AB.
T2N 1N4

Mr. David Blades,
7204 - 119 Street,
EDMONTON, AB.
T6G 1V6
Res.: 436-4972

Dr. Stephen Aki Braimah,
2541 - 116 Street,
EDMONTON, AB.
T6J 3Z7

Mr. Brian Brown,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Bus.: 432-3080

Mr. R. Butts,
Alberta Environmental Centre,
Box 4000,
VEGREVILLE, AB.
T0B 4L0

Dr. J. Robert Byers,
Agriculture Canada,
LETHBRIDGE, AB.
T1J 4B1

Mr. G. Byrtus,
16531 - 114 Street,
EDMONTON, AB.
T5X 3V6
Res.: 456-6651

Mr. J.L. Carr,
24 Dalrymple Green N.W.,
CALGARY, AB.
T3A 1Y2

Dr. H.F. Cerezke,
Northern Forest Research Centre,
Environment Canada,
5320 - 112 Street,
EDMONTON, AB.
T6H 3S5
Bus.: 435-7210

Dr. W.A. Charnetski,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1

Mr. Michael Cheeseman,
Department of Biology,
University of Saskatchewan,
SASKATOON, SK.
S7N 0W0

Dr. H. Clifford,
Department of Zoology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Mr. Kelvin Conrad,
Department of Biology,
University of Calgary,
CALGARY, AB.
T2N 1N4

Mr. Douglas Colwell,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1

Mr. Dan Cottrell,
4216 - 105 B Avenue,
EDMONTON, AB,
T6C 2C7
Phone: 466-3345

Mr. Greg Courtney,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Dr. D.A. Craig,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 436-1417
Bus.: 432-3716

Dr. Robert Cury,
#12 - 422 4th Avenue North,
SASKATOON, SK.
S7N 2M3
Phone: (306) 653-4479

Mr. Douglas C. Currie,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Bus.: 432-3080

Dr. K.R. Depner,
818 - 22 Street South,
LETHBRIDGE, AB.
T1J 3L5

Mr. M.G. Dolinski,
Crop Protection Branch,
Alberta Agriculture,
7000 - 113 Street,
EDMONTON, AB.
T6H 5T6

Mr. J.A. Drouin,
Environment Canada,
Northern Forest Research Centre,
5320 - 122 Street,
EDMONTON, AB.
Res.: 434-2341

Mr. Don Elliott,
8801 East Saanich Road,
SYDNEY, B.C.
V8L 4H3

Dr. W.G. Evans,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 1V3
Res.: 435-5731
Bus.: 432-3376

Mr. Markus Eymann,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Mr. F.K.P. Fennie,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Dr. Albert Finnamore,
Natural History Section,
Provincial Museum,
12845 - 102 Avenue,
EDMONTON, AB.
T5N 0M6
Res.: 482-2893
Bus.: 427-1731

Mr. B. Godwin,
Olds College,
OLDS, AB.
T0M 1P0

Mr. M. Goettie,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Dr. R.H. Gooding,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 434-3119
Bus.: 432-3929

Dr. G.C.D. Griffiths,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 922-3221

Ms. Janet Haley,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 433-8842
Bus.: 432-4560

Dr. E.S. Hall,
3423 Benton Drive N.W.,
CALGARY, AB.
T2L 1W7

Mr. Jack Harlos,
Pesticide Chemicals Branch,
Alberta Environment,
9820 - 106 Street,
EDMONTON, AB.
T5K 2J6

Dr. A.M. Harper,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1

Dr. W.O. Haufe,
3620 South Parkside Drive,
LETHBRIDGE, AB.
T1K 0E3

Dr. B. Heming,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 435-5791
Bus.: 432-4173

Mrs. K. Heming,
10948 - 75 Avenue,
EDMONTON, AB.
T6G 0G9
Res.: 435-5791

Mr. C.R. Hergert,
2316 Crestwood Road S.E.,
CALGARY, AB.
T2C 0C6
Res.: 279-2658
Bus.: 272-8753

Mr. G. Hilchie,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 434-9062
Bus.: 432-4796

Dr. B.D. Hill,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1

Mrs. J. Hocking,
P.O. Box 232,
SEBA BEACH, AB.
T0E 2B0

Dr. Robert G. Holmberg,
Athabasca University,
P.O. Box 10000,
ATHABASCA, AB.
T0G 2R0
Res.: 675-3396
Bus.: 675-6226

Mr. T. Holter,
1052 Lake Christina Way S.E.,
CALGARY, AB.
T2J 2R3

Dr. Ruth Lynn Hopper,
EHEA - Sagami #75,
Army Post Office,
SAN FRANCISCO, CA.
96343-0079 U.S.A.

Ms. Marjorie Horne,
84 Southampton Drive S.W.,
CALGARY, AB.
T2W 0T8
Phone: 255-5177 or
220-7634

Mr. Robert Hughes,
P.O. Box 1209,
VEGREVILLE, AB.
T0B 4L0
Phone: 632-4942

Mr. W.G.H. Ives,
Environment Canada,
Northern Forest Research Centre,
5320 - 122 Street,
EDMONTON, AB.
T6H 3S5

Mr. Ron Jackson,
P.O. Box 1177,
ATHABASCA, AB.
T0G 0B0

Dr. Dan Johnson,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1

Mr. Jim W. Jones,
Alberta Agriculture,
Plant Industry Division,
7000 - 113 Street,
EDMONTON, AB.
T6H 5T6

Mr. Michael Kasserra,
#2201, 202 Braeyleen Close S.W.,
CALGARY, AB.
T2W 2B1

Dr. W. Kaufman,
Department of Zoology,
Z-606 Biological Sciences Bldg.,
University of Alberta,
EDMONTON, AB.
T6G 2E9

Dr. B.A. Khan,
Beef Cattle and Sheep Ranch,
Alberta Agriculture,
7000 - 113 Street,
EDMONTON, AB.
T6H 5T6

Dr. M.A. Khan,
1417 Scenic Drive,
LETHBRIDGE, AB.
T1K 1M4

Ms. C.J. Drause,
68 Green Brook Drive,
BROOKS, AB.
T0J 0J0

Mr. Howard Krushel,
Plant Quarantine,
Agriculture Canada,
Bag 2908, Postal Station M,
CALGARY, AB.
T2P 3C3

Mr. Thomas Kveder,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1

Mr. Richard Lancaster,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1

Mr. David Langor,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 435-6147
Bus.: 432-4560

Dr. D. Lee,
P.O. Box 158,
HALKIRK, AB.
T0C 1M0
Res.: 884-2458

Dr. Robin Leech,
10534 - 139 Street,
EDMONTON, AB.
T5N 2K7
Phone: 452-1311

Ms. Janis Lemiski,
319 - 23 Avenue S.W.,
CALGARY, AB.
T2S 0O3

Mr. C.E. Lilly,
2314 - 10 Avenue South,
LETHBRIDGE, AB.
T1K 0C2

Mr. Ron Linowski,
P.O. Box 1305,
BROOKS, AB.
T0J 0O0

Mr. Jean Lacoursiere,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Mr. Alec McClay,
Alberta Environmental Centre,
Bag 4000,
VEGREVILLE, AB.
T0B 4L0

Mr. S. McDonald,
329 - 27 Street South,
LETHBRIDGE, AB.
T1J 3R7

Mr. A.J. McIntosh,
5th Floor, Oxbridge Place,
9820 - 106 Street,
EDMONTON, AB.
T5K 2J6
Bus.: 427-5855

Mr. Malcolm McKee,
Alberta Environment,
2938 - 11 Street N.E.,
CALGARY, AB.
T2E 7L7
Bus.: 297-5917

Mr. E.A. Mengersen,
P.O. Box 2392,
OLDS, AB.
T0M 1P0

Dr. B.K. Mitchell,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Res.: 436-3827
Bus.: 432-3237/432-4637

Mr. B.H. Moody,
Environment Canada,
Canadian Forestry Services,
5320 - 122 Street,
EDMONTON, AB.
T6H 3S5

Mr. Dean Mulyk,
9407 - 130 Avenue,
EDMONTON, AB.
T5E 0S1

Dr. A. Nimmo,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 434-9924

Mr. Jim O'Hara,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Mr. Hideji Ono,
P.O. Box 763,
VULCAN, AB.
T0L 2B0

Dr. Robin Owen,
Department of Biology,
University of Calgary,
CALGARY, AB.
T2N 1N4
Res.: 247-0603
Bus.: 220-6910

Mr. P. Pankiw,
P.O. Box 395,
BEAVERLODGE, AB.
T0H 0C0

Mr. W.F.J. Parsons,
Department of Botany,
Box 3165,
University Station,
University of Wyoming,
LARAMIE, WY.
82071 U.S.A.

Mr. L.K. Peterson,
11619 - 46 Avenue,
EDMONTON, AB.
T6H 0A6
Res.: 434-8904

Mr. H.G. Philip, P.Ag.,
Head, Crop Protection Group,
Alberta Environmental Centre,
Bag 4000,
VEGREVILLE, AB.
T0B 4L0
Res.: 632-6148
Bus.: 632-6761

Mr. D. Pledger,
Pesticides Chemicals Branch,
Alberta Environment,
9820 - 106 Street,
EDMONTON, AB.
T5K 2J6

Mr. Greg Pohl,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 988-5164

Dr. G. Pritchard,
Biology Department,
University of Calgary,
CALGARY, AB.
T2N 1N4

Ms. Heather C. Proctor,
#1105N - 3524 - 31 Street N.W.,
CALGARY, AB.
T2L 2A5

Dr. W.S. Procnier,
British Museum (Natural History),
Cromwell Road,
London SW75BD,
ENGLAND

Mrs. Lynn A. Royce,
Department of Entomology,
Oregon State University,
CORVALLIS, OR.
97331 U.S.A.

Dr. K.W. Richards,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1
Phone: 327-4561

Mr. J. Rickert,
10475 - 143 Street,
EDMONTON, AB.
T5N 2S5

Mr. Jens Roland,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3
Res.: 452-7906
Bus.: 432-3080

Mr. Brian Rolseth,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Dr. J. Ryan,
Department of Entomology,
University of Alberta,
EDMONTON, AB.
T6G 2E3

Dr. R.W. Salt,
639 - 18 Street South,
LETHBRIDGE, AB.
T1J 3E9

Mr. Allan C. Schaaf,
1212 - 6 Avenue South,
LETHBRIDGE, AB.
T1H 2Z5
Phone: 328-8426

Dr. Burton Schaber,
Research Station,
P.O. Box 3000, Main,
LETHBRIDGE, AB.
T1J 4B1
Bus.: 327-4561

Mr. P. Scholefield,
Alberta Environment,
2nd Floor, Deerfoot Square,
2938 - 11 Street S.E.,
CALGARY, AB.
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Pesticide Chemicals Branch,
Alberta Environment,
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University of Alberta,
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University of Alberta,
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Mr. Joachim Wochr,
Box 1105,
BROOKS, AB.
T0J 0J0
Phone: 362-3048

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Canadian Forestry Service,
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