

Proceedings of the
Twenty-seventh Annual Meeting
of the
ENTOMOLOGICAL SOCIETY
of
ALBERTA



October 18-20, 1979
John Janzen Nature Centre
Edmonton, Alberta

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PROGRAM SYMPOSIUM

THURSDAY, OCTOBER 18

1600 h Executive meeting
1930 h Reception and registration, Athabasca Hall
 Annex

FRIDAY, OCTOBER 19

0800 h Registration Continued
0830 h Welcoming remarks - Mr. J. Cam Finlay, Director
 and Mr. Bill Reynolds
 John Janzen Nature Centre

0845 h Presidential Address - Dr. H.R. Wong

0900 h Keynote Lecture - Dr. W. Samuel

1030-1200 h Submitted papers

1400-1620 h Submitted papers
1630-1720 h Business meeting
1800 h Mixer and Banquet
 Guest Speaker - Dr. G.E. Ball

SATURDAY, OCTOBER 20

0830-1100 h Submitted papers
1100-1200 h Business meeting

PRESIDENT'S ADDRESS

H. R. Wong

It is my pleasant duty to welcome you to the 27th Annual Meeting of the Entomological Society of Alberta. Our Society, known to be a progressive and innovative one, is holding its Annual Meeting this year at the John Janzen Nature Centre instead of in a University, Federal or Provincial building. The John Janzen Nature Centre is the first major municipally operated Centre in Canada and, as stated in its brochure, "invites you to discover nature". This setting and invitation are very appropriate for the Entomological Society of Alberta, whose objective is to "foster the advancement, exchange and dissemination of knowledge of insects".

We are again this year featuring a keynote lecture by Dr. Bill Samuel, Department of Zoology, University of Alberta, who will be discussing ticks, mites and lice, and I am waiting to discover what, as his title indicates, is nice about these creatures. From within our own membership, we have selected a very capable, colorful, and interesting after-dinner speaker in Dr. George Ball, Department of Entomology, University of Alberta, who will tell us about a naturalist on the Rio Demiti with his faithful porter Kay.

The thing that is most heartening to me is the participation again of many students in the scientific program. I attribute this to the cordial relationship between students and professors, and their encouragement to participate. I can best illustrate this relationship by citing an incident at one of the Lethbridge meetings. The present chairman of the Department of Entomology, University of Alberta, was seen carrying a case of beer under each arm and a briefcase in one hand, struggling and perspiring along the hall of one of the buildings, with several students following in his wake empty handed. I happened to remark that he had the ingredients of a good party, and Dr. Ball said that the beer belonged to one of his students, and maybe he would get a drink. This certainly is a far cry from my days as a student, when the roles would certainly have been reversed. I am not suggesting for a moment that Dr. Ball likes beer, or that his students should buy him a case, because I don't know whether that particular student ever passed exams or ever graduated.

In times of severe financial restraint, the government has found it expedient to make budgetary cuts to provide funds for immediate stimulation of the economy. This unfortunately means that less money is available for science and technology. The scientific community is trying to change government policy by making the public more aware of our profession and what it is contributing to the field of science. The Entomological Society of Alberta has taken three steps to make the public more aware of our activities. Tree Pest Clinics have been conducted at two major shopping centres in Edmonton by Hugh Philip, Marilyn Steiner, Jim Drouin, and Jim Emond. The program committee consisting of Herb Cerezke, Bev Mitchell, Jim Sutcliffe, and Jim Muldrew has notified the media about our Annual Meeting and the scientific papers presented. Finally, a photo salon is being featured this year, in which entomological photographs will be on display at the Nature Centre from the beginning of October to the end of our meeting.

It has been an honor and a pleasure to be President of the Entomological Society of Alberta in 1979. I would like to express my sincere thanks to the members and especially to those who contributed to the success of the society during the past year.

Ticks, Mites and Lice And Other Things Nice

Dr. Bill Samuel
Department of Zoology
University of Alberta
Edmonton

This address summarized research on parasitic arthropods that is ancillary to my major research on helminths of wild ruminants of Western Canada. The main intents of the presentation were to demonstrate to the audience the importance of these arthropods to the wildlife of the West and the unbridled enthusiasm and dedication needed to accomplish good science. Data were presented on the current epizootic of the winter or moose tick, Dermacentor albipictus, on moose of Alberta. This tick has been directly or indirectly responsible for losses of moose during the last 3 winters. Sarcoptic mange of coyotes and wolves was discussed. The pathology of this disease, which can affect up to 20% of local wild canid populations in Alberta, was summarized. The seasonal fluctuations of chewing lice on deer were reviewed. Comparison was drawn between louse populations on deer of Texas and Alberta. Finally, the potential importance of a blood-feeding chewing louse of the skin and throat pouches of juvenile white pelicans was discussed. This virtually unstudied parasite causes severe ulcerative hemorrhagic stomatitis in many juvenile pelicans in Alberta-Saskatchewan nesting colonies.

Introduction to the Clifford E. Lee Nature Sanctuary (near Devon)

Graham C.D. Griffiths
Department of Entomology
University of Alberta

The Clifford E. Lee Sanctuary is situated on the Devon Sandhills about 1 mile West of the University Botanical Gardens. These sandhills were formed in postglacial times on the shore of Lake Edmonton. They now support a diverse mosaic of habitats, ranging from open sand ridges and pine forest to extensive willow thickets and marshes. The water bodies are calcareous and relatively oligotrophic, quite different chemically from most lakes and sloughs in the Edmonton region.

Botanical investigations of the Sanctuary were completed by the author during 1979, and the report will soon be available. This work will facilitate entomological studies during coming years. The Management Committee for the Sanctuary (administered under a lease issued by the Clifford E. Lee Foundation to the Canadian Nature Federation) is interested to receive proposals for research which will provide information for public education programs, providing that the research methods are not unduly destructive. It is hoped that entomologists will undertake work in this Sanctuary, whose terrestrial and aquatic insect fauna is likely to include unusual elements.

Mouthpart Morphogenesis in Embryos of Haplothrips verbasci
(Osborn) (Thysanoptera: Phlaeothripidae)

B.S. Heming
Department of Entomology
University of Alberta

The asymmetric "punch and suck" mouthparts of larval H. verbasci develop from paired appendages in the late, post-anatrepsis embryo similar to those of other insects. Later, the labrum flexes ventrally over the stomodaeum, the right mandibular appendage degenerates, the maxillary appendages divide into inner (lacinial) and outer (stipital) lobes, and the hypopharynx arises from the venters of the mandibular and maxillary segments. All cephalic segments consolidate anteriorly prior to katatrepsis, their appendages flex ventrally, and the labial appendages fuse medially to form the labium and the primordia of the salivary glands and valve.

After katatrepsis, the left mandible and the lacinial lobes of the maxillae invaginate into the head as the mandibular and maxillary stylet-secreting organs and these later deposit the cuticle of their respective stylets. Cuticle of the mandibular lever is deposited by labral cells at the apex of the mandibular sheath during and after hatching. That of each maxillary lever is secreted simultaneously into the lumen of a ventrally-directed diverticulum developing from stipital cells at the apex of each maxillary sheath.

Shortly after katatrepsis, the maxillary and labial palpi originate respectively from cells in the outer wall of each stipital lobe and at the apex of the labium.

Muscles of the mouthparts arise after katatrepsis from cephalic mesoderm and are fully differentiated before cuticle of the mandibular and maxillary levers has been deposited.

Gnathal morphogenesis in embryos of H. verbasci provides additional evidence that Thysanoptera and Hemiptera evolved from a common psocopteroid stem species having small, biting and chewing mandibles and well-developed lacinial stylets.

The embryogenesis of the mandibular and maxillary stylets of
Macrosteles fascifrons (Stål.)

Fran Leggett
Department of Entomology
University of Alberta

Development of the mandibular and maxillary stylets was followed from early anlagen stage to hatching.

The stylets arise as lateral evaginations of the surface ectoderm of the embryo. As growth continues, the evaginations move mesially and the maxillary rudiments divide longitudinally into inner and outer lobes. The mandibular and the inner lobes of the maxillary anlagen elongate and become matchstick-like. The outer maxillary lobes become conical and remain in that form for the rest of development. Just prior to katatrepsis, the clypeolabrum begins to unfold ventrally and the stylets and other mouthpart appendages begin to sink aphenally into the head. Slightly later the bases of the mandibular and maxillary rudiments invaginate dorso-ventrally towards the dorsal surface of the head. Katatrepsis occurs, the epidermis of the stylets becomes thicker on one side and its cells secrete the precursor material of the cuticular stylet. By the time of Dorsal Closure, the retractor and protractor muscles of both stylets are present. Towards the end of their development, the cellular stylet rudiments disintegrate, leaving the secreted material, which, just prior to hatching, sclerotizes. The levers of the stylets are formed from diverticula of the stylet sacs either just prior to hatching or just after.

Embryogenesis of the stylets was discussed in relation to the evolution of piercing and sucking mouthparts in hemipteroid insects. It was noted that stylet formation in Macrosteles shares features with that of coccids as studied by Pesson and with that of Oncopeltus as described by that of Newcomer. The maxillary plate of Hemipteroids can be homologized with the stipes and the stylet with the lacinia of the maxilla of biting and chewing insects.

Back to The Egg

Stephen Berté
University of Calgary

During the summer of 1979, it was estimated that the females of a population of Nemotaulius hostilis (Hagen) (Trichoptera: Limnephilidae) laid 6422 egg masses over a 30 day period. From estimates of the average number of eggs per mass and the average female fecundity, both the number of eggs laid and the number of ovipositing females were calculated. The data also yielded information concerning oviposition rates and densities.

The importance of the egg stage as a source of information regarding certain aspects of the life histories of insects is discussed.

Environmental Roles of Insects in the Athabasca Oil Sands Region of Alberta

James K. Ryan
 McCourt Management Ltd.
 Environmental Consulting Service

In 1978 three studies were carried out on insects of the Athabasca oil sands area. These include a field survey of terrestrial insect communities, which is continuing this year, and literature surveys on obligate insectivores in the study area, and on the potential for using insects as biomonitors of environmental change. Insect communities were studied in 12 habitats. The biomass on insects collected averaged 0.82 g oven dry weight m^{-2} , and ranged from 0.28 (Jack pine forest) to 3.11 (fen) grams. The majority of these were soil dwellers, as only 8% of the insect biomass was collected on foliage. Spider biomass ranged from 0.03 to 0.20 g m^{-2} . The combined biomass ratio of carnivore insects and spiders to potential prey was 0.65, a high value which indicates that insects and spiders are the worst enemies of other insects. Representatives of 178 insect families were identified from the area. Members of more than 100 arthropod families and 153 vertebrate species known or likely to occur in the oil sands area are obligate insectivores during some period of their lives. This represents a major food link between insects and the rest of the animal world. The bio-monitoring study showed this science to be in an infant state, with insects being potentially useful in several ways.

Polyplax serrata: Acquired resistance of mice to lice can be transferred in skin transplants to nude mice

J.F. Bell, S.J. Stewart
 Rocky Mountain Laboratory, Hamilton, Montana

W.A. Nelson
 Agriculture Canada, Lethbridge

Louse-resistant skin taken from RML mouse donors maintained its resistance when grafted onto athymic nude mice. Naive (unexposed) skin from louse-resistant or naive donors supported active louse populations and did not acquire resistance over a 12 week period. These findings were true even when both naive and resistant skin was grafted onto the same animal. Inflammatory cell infiltration, edema and epidermal hyperplasia were minimal or nonexistent in resistant and naive grafts. It was concluded that nude mice were unable to mount a resistance to lice, and that unknown cellular components transferred with resistant allografts served to maintain their resistance.

Control of Salivary Gland Degeneration in
the Ixodid Tick Amblyomma hebraeum

Robert Harris
Department of Zoology
University of Alberta

In the female tick, Amblyomma hebraeum Koch the degree of salivary gland degeneration which normally occurs following engorgement and prior to vitellogenesis can be quantitatively assessed from an increased titre of acid phosphatase (a lysosomal marker enzyme) and a decreased titre of succinic dehydrogenase (a mitochondrial marker enzyme). These changes occur within 3-5 days post-engorgement. Partially fed females do not show these characteristic changes if they are removed from the host prior to attaining a body weight of 450 mg. I thus performed parabioses between partially fed females and fully gorged females. Parabioses between several pairs of partially fed females served as controls. Preliminary data are consistent with the hypothesis that salivary gland degeneration might be under hormonal control.

Haemolymph volume regulation by salivation in
female ixodid ticks during feeding

W. R. Kaufman
Department of Zoology
University of Alberta

For some years we had circumstantial evidence that in female ixodid ticks excess fluid of the blood meal was secreted via the salivary glands back into the host's circulation. In the present experiments I injected a large volume of various isosmotic fluids directly into the haemocoel of partially-fed Amblyomma hebraeum Koch ticks such that the salivary glands secreted 0-100% of the injected load. The results indicate an inverse correlation between saliva volume and the resultant haemolymph volume. Moreover, one can quantitatively account for the final haemolymph volume on the basis of the salivary secretion alone: i.e., there is no need to postulate a secondary route of fluid excretion in this species. A summary of various pharmacological experiments demonstrate at least two sensory systems impinging on the nerves controlling salivary fluid secretion. One is cholinergic pathway, the physiological function of which is unknown; the other is a pathway which monitors haemolymph volume in some way, but in this case the neurotransmitter is not known.

Potentialiation by butyrophenone drugs of dopamine-induced
fluid secretion in isolated salivary glands of the
ixodid tick Amblyomma hebraeum

Dorothy Wong
Zoology Department
University of Alberta

Spiperone, a butyrophenone drug which is a potent dopamine-receptor blocker in mammalian tissue, caused a potentiation of dopamine-induced fluid secretion in the isolated salivary gland of Amblyomma hebraeum. Spiperone did not trigger secretion by itself. The ED₅₀ for spiperone-mediated potentiation was about 10^{-12} M. Several other butyrophenones such as haloperidol, droperidol and pimozide also potentiated secretion, whereas penfluridol seemed to partially inhibit secretion. Tranylcypromine, a potent monoamine oxidase inhibitor, also potentiated dopamine-induced secretion, but spiperone still elicited its effect in the presence of dopamine plus tranylcypromine. The latter suggests that the mechanism of spiperone's action is not primarily by inhibiting monamine oxidase.

Control of horn flies, Haematobia irritans(L.)
on range cattle in east-central Alberta

Hugh G. Philip
Alberta Environmental Centre
Vegreville, Alberta

Because of an apparent lack of knowledge among Alberta range cattle producers on horn fly control, a 2 year research/demonstration field project was set up in east-central Alberta. In cooperation with interested ranchers, various insecticides and application techniques were tested/demonstrated to (a) show ranchers what methods are currently available for horn fly control, (b) evaluate the efficacy of new unregistered products and application techniques, and (c) to assess the interest and commitment of a rural community in cooperating on a research/demonstration field project.

Of the various application methods tested, forced-use dust bags and free-choice cattle oilers provided the most satisfactory control. Free-choice dust bags and cattle dusters provided poor control.

Results of the performance of various products and application techniques were presented.

Sampling Attachment Silk of Black Fly (Diptera:Simulidae) Larvae.

W. B. Barr
Department of Entomology
University of Alberta

Naphthol blue black stains the colorless, transparent, freshly spun silk of black fly larvae. Characteristic of silk attachment pads of these larvae are: 1) an arc where the thoracic proleg attached; 2) a "U" shape where the mouthparts attached; and 3) an area bounded by a raised ring, where the anal proleg attached.

In the Sturgeon River near Onoway, Alberta in late July and early August 1979, Simulium vittatum attachment pads on microscope slides in gauze-ended acrylic cylinders rotted away in 4 or 5 days. Polyethylene tapes accumulated 3 attachment pads to every S. vittatum larva found attached. On this indirect evidence, larvae spun and attached to new pads before the pads they last grasped were 2 days old. The number of fresh pads on these strips correlates well with the number of larvae found attached.

An Odonatological Orgy

Gordon Pritchard
Department of Biology
University of Calgary

Highlights of the Fifth International Symposium of Odonatology, held at St. Therese, P.Q., are presented. The meeting was attended by about 50 dragonfly enthusiasts from 9 countries and papers were presented in the areas of Habitat, Adult Behavior, Structure, Physiology, Taxonomy, Life Histories, and the History of Odonatology in Quebec.

Some recent developments in the study of the life history of Argia vivida, a damselfly that occurs in warm and cold streams from Mexico to Banff, were presented by the author. Factors such as photoperiod, water temperature, and food availability are known to control the life history at higher latitudes, but information from the southern part of the species' range is lacking.

Habitat and Microhabitat Segregation in Marsh Agonum

Jean-François Landry
Department of Entomology
University of Alberta

Three co-occurring species of marsh Agonum partition eutrophic marshes with respect to habitats and microhabitats. Regarding habitats, A. nigriceps occurs predominantly (80% of specimens collected) in flooded grass/sedge zones, whereas A. ferruginosum is predominant (75%) in flooded cattail zones. A. thoreyi occurs slightly more in grass/sedge (55%) than in cattail (33%). A significant proportion (12%) of the latter species is found on the moist ground edging marshes, as compared to none of the two other species. Where overlap appears in flooded habitats, there is further segregation in microhabitats. In cattail, 85% of both A. ferruginosum and of A. thoreyi occur in bundles of dead plant debris, as compared to 50% of A. nigriceps. The two former species further segregate microhabitats with respect to presence of emergent substratum, 58% of A. thoreyi occurring where substratum emerges of the water, as compared to 27% of A. ferruginosum. Only 11% of A. nigriceps are found in that microhabitat. In grass/sedge, the proportions collected in bundles of dead plant debris are about the same as in cattails in all three species. Segregation with respect to presence of emergent substratum is weak, with 5% of A. nigriceps, and 15% of both A. ferruginosum and of A. thoreyi found there. Microhabitat segregation in grass/sedge is strongest in relation to tussocky vegetation: 50% of A. nigriceps are found in tussocks as compared to 38% of A. ferruginosum and to 15% of A. thoreyi. There is little evidence that competition, as suggested by the theory of partitioning, could be the overriding mechanism that would have led to the observed discrepancies in habitats and microhabitats. A climbing behavior, displayed at different degrees depending on the species, is possibly an important factor in determining the observed patterns of partitioning.

An Evaluation of the Role of Cardiac Glycosides in the Large Milkweed Bug, Oncopeltus fasciatus Dallas

Deborah Hughes Spence
Department of Entomology
University of Alberta

Oncopeltus fasciatus was reared on sunflower seeds and seeds from four Asclepiad plants containing a range of cardenolides. The responses of Bufo marinus, Gallus gallus, and Perisoreus canadensis predators were recorded when fed the variously reared bugs. None of the predators showed emetic responses to the quantities administered nor did they reject them behaviourally. There is some partial rejection in chickens when offered

bugs dried for only 1.5 hours versus bugs dried 10 hours suggesting some as yet undetected predator avoidance characteristic. Human taste volunteers ranked the bitterness of the dorso-lateral secretions sequestered by the milkweed bugs on four of the above seeds and found that bitterness increased with cardenolide concentration. The insects were colorimetrically assayed and the concentration of cardenolides was determined to range between 0 - 345 ug/insect.

Density Estimation for Water-striders: Development of a Procedure

John R. Spence
Department of Entomology
University of Alberta

Estimates of relative and absolute abundance were compared in field populations of two Gerris species using linear regression. Separate equations for each gerrid size class allow prediction of population density from timed-catch sampling. Presence or absence of vegetation markedly affected capture rates, but capture rates were not affected by Gerris species or type of emergent vegetation. Catchability varied with gerrid leg length; this relationship can be used to estimate the slopes of regression lines for other water-strider species. Resulting regression equations can be used to estimate population densities which may be compared across species, habitats and season, and thus, are a first step in studying species interactions from a regional perspective.

Ground Beetles in Trees?

G. E. Ball
Department of Entomology
University of Alberta

In the Temperate Zone, most carabid beetles are geophiles, living most of their lives on or near the surface of the ground. In the tropics, though there are many geophiles, many other carabids live on standing trees, above the ground's surface. In the New World Tropics, one method of sampling this arboreal fauna is to examine parasitic plants of the family Bromeliaceae, for arboreal carabids use these plants as hiding places.

In Mexico, differences in species composition of arboreal communities is striking, both latitudinally/longitudinally, and altitudinally. Between adjacent mountain systems, more of the species inhabiting the forests at lower altitudes are shared than are the species that live in forests at higher altitudes. This is the same pattern that characterizes the terrestrail fauna,

and suggests that even though adults of the arboreal fauna may be expected to be more vagile than their terrestrial counterparts, in fact this expectation is only partly realized.

Altitudinally, the fauna seems to be maximally diverse at middle altitudes (500 to 1500 meters). The fauna at high altitude (in excess of 2000 meters above sea level) is much less diverse; at low altitudes, somewhat less diverse.

In Mexico, two tribes of carabids contain most of the arboreal species: Lebiini, with a number of arboreal genera; and Platynini, with two arboreal genera. Each tribe includes several hundred Mexican species. Both tribes are represented in forests from near sea level to at least 2500 meters, but lebiines are most numerous to about 1500 meters, whereas platynines are predominant at higher elevations.

At the species level, the arboreal fauna shows pronounced altitudinal differences, with the range of arboreal species extending from sea level to more than 2500 meters above sea level. For both platynines and lebiines, maximum diversity seems to be in middle altitude tropical forests. More species of arboreal platynines reach higher elevations, and there are endemic species at higher elevations. On the other hand, platynine species are few at lower elevations. Conversely, endemic lebiines are few at high elevations, and plentiful at low elevations. As might be expected, platynines are more diverse at higher latitudes, whereas lebiines are more diverse in the tropics and in warm temperate areas.

If diversity is a measure of evolutionary success, lebiines are more successful under tropical conditions, whereas platynines are more successful under more temperate conditions. Therefore, climatic adaptation seems to be a tribal characteristic, and differential altitudinal and latitudinal distribution is a function of this adaptation. Thus, altitudinal and latitudinal replacement of one group by the other is perceived primarily as the result of a basic adaptation to climate, rather than as the result of direct competition between individual species of lebiines and platynines.

Insects Attacking Fruits of Saskatoon in Alberta

J. A. Drouin
Northern Forest Research Centre
Edmonton, Alberta

Saskatoon (Amalanchier alnifolia Nutt) has a wide distribution and a record of extensive use in the past. New varieties have created an awareness for its use as a commercial crop.

Field studies were made from 1975 to 1979 in Alberta to determine the major insect attacking the fruit.

Sawflies and weevils were found to be the major pests on the fruit of saskatoon. Life histories and damages caused by two of the four sawfly species were discussed briefly. Two species of weevils, the apple curculio and another identified as Pseudanthonomus sp., attacked 1 to 2 percent of the berries reared.

The gyrophaenines (Aleocharinae:Staphylinidae), a group of obligatory mushroom-inhabiting rove beetles: the mushroom as a habitat.

Steve Ashe
Department of Entomology
University of Alberta

Members of the subtribe gyrophaenina are obligatory inhabitants of fresh mushrooms. Both adults and larvae feed exclusively on the spore producing layer which they graze from the mushroom gills using a specially modified spinose spore brush on the lacinia of the maxilla.

For the gyrophaenines, gilled mushrooms 1) are short lived, 2) occur erratically in time and space, 3) provide an abundant food source and 4) are very diverse chemically and physically. Gyrophaenine adaptations to this habitat include: 1) efficient dispersal and rapid colonization of mushrooms, 2) oviposition very soon after arrival, 3) very brief larval period, and 4) heavy exploitation of mushroom when found.

Two key adaptations have allowed exploitation of a previously unused portion of the mushroom habitat. The maxillary spinose spore brush allows efficient collection and utilization of maturing spores and basidia and movement into a nutritionally rich, diverse, and essentially empty habitat. Development of efficient host finding mechanisms and a brief larval period allows utilization of an ephemeral habitat.

QUESNELL BRIDGE
OVER
NORTH SASKATCHEWAN
RIVER

EDMONTON

JOHN JANZEN NATURE CENTRE,
EDMONTON CENTRE

MIKE
HARTMAN

GUEST

MARY
STEWART

MICHAEL
CHEESEMAN

JIM & WINNY
SUTCLIFFE

ODONATOLOGICAL
T. SHIRT
(Perithemis
tenera)

ANDY
NIMMO

DOUG
CRAIG

ONE FOR YOU
TWO FOR ME
ONE FOR YOU

DICK
WONG

SAM
LOSCHIAVO

BILL
SAMUEL

WE WILL
FOLLOW YOU!

LUNCH AT
BALL'S

BEV
MITCHELL

BILL
NELSON

JOHN
SPENCE

BILL
BARR

HUGH
PHILIP

AUDIENCE

GRAHAM
GRIFFITHS

BILL
KAUFMAN

DOROTHY
WONG

MIKE
DOLINSKI

KEN
RICHARDS

GOT AN OFFER
YOU CAN'T REFUSE

COFFEE BREAK

JOHN
SUTCLIFFE

STEVE
ASHE

STEPHEN
BERTE

DEBORAH
SPENCE

ROBERT
HARRIS

AT OUR FEEDER



27th ANNUAL MEETING - EDMONTON - 1979

GORDON PRITCHARD STEPHEN BERTÉ	JIM DROUIN	GEORGE BALL	JIM RYAN	MARILYN STEINER	JENNY STANGER
DR. & MRS. F.S. SIDDIQUI	RAMONA & JOE GURBA	PAUL WILKINSON SUE NIMMO	ANDY NIMMO JOE SHEMANCHUK GERRY HILCHEY	GORDON PRITCHARD	
RUTH JONNA & DOUG CRAIG BILL SAMUEL CRAIG GEORGE BALL	DOUG CRAIG	GRINGO GEORGE BALL	COACH BALL	JOAN & GEORGE EVANS	
JOCELYN HOCKING	KAREN HEMING	BRUCE HEMING	FRAN LEGGETT	GORDON PRITCHARD	M. STEWART T. LYSYK R. LANCASTER
GEORGE EVANS	KAY BALL	GEORGE BALL	HUGH PHILIP	JOE GURBA	PAUL WILKINSON
BIG BROTHERS ARE WATCHING!	"THE BRASS" DOUG CRAIG	DICK WONG	T. LYSYK	MARY STEWART	BRUCE HEMING
HOW MANY FINGERS DO I SEE NOW!	? X !!	INSECT COLLECTION COMPETITION	THESE SHOES WERE MADE FOR WALKING	BILL NELSON	

MINUTES OF SPRING EXECUTIVE MEETING

Entomological Society of Alberta

An executive meeting of the Entomological Society of Alberta was held May 26th, 1979, Board Room, Northern Forestry Research Centre, Edmonton, 09:00 hours. Present were W. A. Charnetski, D. A. Craig, M. G. Dolinski, H. Philip, K. W. Richards, R. H. Wong and H. Cereske (Local arrangements - as visitor).

1. Minutes of previous meetings: There were no errors pointed out in the 1978 Minutes. Moved for adoption, D. A. Craig, seconded by H. Philip, Carried.
2. Interim Treasurer's Report: D. A. Craig reported a current bank balance of \$1775.47 (April 23), \$15.91 petty cash and \$13.00 unbanked membership dues, to give a total of \$1804.38. He also commented that a complete set of past Proceedings had been sold to Dr. Schierenberg, Amsterdam for \$80.00 (not yet collected); and Proceedings from 1970 to Swets Subscription Service, Holland for \$21.71 (quoted at \$22.00) (received). The latter Service had since requested prices of complete sets of Proceedings.

The ESA is in satisfactory financial state.

3. Membership: D. A. Craig reported that there were 101 members, three honorary members and three library members - one new (N.C. State University). No action had been taken on producing an application form for the Society as present methods of enrolling members work adequately.

Business Arising from the Minutes

4. Entomological Society of Canada Honours: Nominations for Gold Medalist were discussed and H. Cereske, seconded by M. G. Dolinski moved that "The nomination as discussed be forwarded to ESC", Carried.
5. Honorary Membership in ESA: Two nominations were discussed. It was moved by W. A. Charnetski, seconded by K. W. Richards "That the two nominations discussed be presented to the membership at the Annual General Meeting", Carried. W. A. Charnetski and H. Philip to provide respective documentation.
6. Insect Collection Competition and Alternative Methods of Encouragement: M. G. Dolinski reported that he had enquired into the possibility of using the Alberta Rural Safety Course as a vehicle for an entomological essay competition. This is under the jurisdiction of the Minister of Education and would be most complex to pursue further. It was generally agreed to not go further with that item. It was further pointed out that schools are inundated with competitions and there is little likelihood of encouragement from the schools. Dolinski further reported on attempts by K. Parker to start competitions in schools as he has contacts with biology teachers. There was virtually no input from the Department of

Entomology, University of Alberta on the proposal. The project will be pursued further.

K. W. Richards suggested that prizes be offered to the best entry of an entomological nature in local Science Fairs. Dolinski is to investigate this possibility.

H. Philip reported on two "Insect Pest Control Clinics" held at the Bay, Londonderry 12 May (J. Drouin, J. Emond) and Southgate 19 May (H. Philip, M. Steiner) under the aegis of ESA. The first Clinic processed approximately 30 enquiries between 12:00 noon and 4:00 p.m.; the second, probably hundreds of enquiries, and generated much interest. The Bay is most enthusiastic and had budgeted \$300.00 for costs of advertising, etc. It was not known if, or how much of, that money would come directly to the ESA.

H. Philip further reported that the Muttart Conservatory has a free display area that ESA could use. H. R. Wong suggested that a display could be placed in the shopping malls prior to the Annual Meeting on October. The Department of Entomology, University of Alberta, is to be asked to help in a major way because of the excellent technical help available.

7. Joint Meeting with Ent. Soc. Can. 1981: W. A. Charnetski, who will be President of ESA in 1980, agreed to contact the Ent. Soc. Can. Program Committee and to make enquiries into venue and timing. It was generally agreed that if a mountain location for the meeting was not feasible, Edmonton would be preferred.
8. ESC Regional Directors Report: As J. Shemanchuk was not present, K. W. Richards reported. As Directors do not now attend the winter ESC Board Meeting there was nothing to report. However, the regional societies have been asked to comment on a series of points raised by ESC in regard to ESC's relationship with SCITEC. As the issue was somewhat confused it was generally agreed that Shemanchuk was to meet with the Edmonton members of ESA executive to prepare a reply to ESC before its annual meeting in Vancouver in October.

New Business

9. Correspondence: D. A. Craig reported that the only correspondence had been a letter of thanks from the Zoological Record for the annual donation, a series of letters from Alberta Consumer and Corporate Affairs regarding annual reports to that Department, and the letters from purchasers of back issues of proceedings (already discussed). H. R. Wong had notification from Student Awards, University of Alberta, that the Department of Entomology would not be awarding a prize this year. A further letter to the President was an invitation from Ent. Soc. Sask. to hold a joint meeting with them in Saskatoon in 1980.
10. Joint Meeting with Ent. Soc. Sask 1980: The executive all felt that such a meeting would be mutually beneficial. H. R. Wong was instructed to

reply in the above vein, but that the matter would have to finally rest with ESA membership and if so agreed, to choose a time compatible with the Western Forum Committees, if possible.

11. Editor's Report: H. Philip reported that he needs the President's report, and the Regional Director's report, but otherwise the 1978 Proceedings are ready for publication and should be out by early June.
12. Ent. Soc. Alta. Annual Meeting 1979: H. Cereske, Local Arrangement Committee, reported that the J. Janzen Nature Centre would be available for approximately \$100.00. This was considered to be a different and interesting setting. Parking readily available. Dates were discussed and October 19 - 20, 1979 decided upon. Moved by H. Cereske, seconded by D. A. Craig "That the 1979 Annual Meeting be held at the J. Janzen Nature Centre, October 19 - 20, 1979", Carried.

For the wine and cheese party and registration on the evening of October 18th, the Department of Entomology, University of Alberta, seminar room was thought to be adequate. D. A. Craig to explore this item further. For the banquet, Fort Edmonton or the Faculty Club were suggested. H. Cereske to explore further. G. E. Ball has agreed to be After Dinner Speaker.

No Program Committee was yet struck but D. A. Craig was to attempt to get B. K. Mitchell and/or W. G. Evans to serve in that capacity. Students would also be involved.

W. Ives was to be approached to be Guest Speaker.

R. H. Wong raised the possibility of alerting the media about the meeting and any possible displays in the shopping malls.

The meeting adjourned 11:15. Moved by H. Philip, seconded by M. G. Dolinski, Carried.

MINUTES OF THE FALL EXECUTIVE MEETING

Entomological Society of Alberta

A meeting of the ESA executive was held October 18th, Room 255, Agriculture Building, University of Alberta, 6:55 p.m. Present were:- D. A. Craig, K. W. Richards, J. Shemanchuk, H. R. Wong.

1. The minutes of the previous executive meeting held May 26th, 1979 were adopted. Moved by J. A. Shemanchuk, seconded by K. W. Richards, Carried.
2. D. A. Craig presented an interim financial report, stating that as of that date the Society had a \$1,938.69 bank balance. He noted that cost of producing the 1978 Proceedings would be \$254.66, postage \$44.49.
3. D. A. Craig reported that there were 60 paid-up (1979) members, 34 not paid-up, 5 new members, 3 honorary members, 3 library members. He had removed 6 members from the list, those who had not paid for two years.
4. Regional Director's Report: Shemanchuk gave a brief report. The major point of interest being the places of forthcoming ESC meetings:
 - 1980 Quebec City. Chateau Fontinac, October 6 - 8th.
Theme "Overwintering Strategy".
 - 1981 Banff. October 4 - 9th.
 - 1982 ESC/ES America. Toronto
 - 1983 ESC/International Congress of Professional Biologists (perhaps). Toronto or Ottawa.
5. Awards: There were no recipients for the ESA Prize. The ESA nomination for ESC awards was being kept active and the two nominations for ESA Honorary Membership were discussed and strategy planned for their presentation to the General Meeting.
6. Environmental Council of Alberta: Shemanchuk reported that there had been 10 meetings of which he had attended 8. The main topic during the year had been the use of sewage for irrigation. There was little of entomological interest, except that it was noted that approximately 90% of the recommendations brought forward in "Use of Insecticides in Alberta" had been adopted by the Alberta Government.
7. ESA/ESC Joint Meeting, 1981: K. W. Richards reported on behalf of W. A. Charnetski that tentative bookings had already been made with the Banff Centre for October 4 - 9th, 1981. Daily rates will probably include 3 meals. No theme for the meeting had yet been chosen.

New Business

8. William Gordon Award: It was noted that E. Gushel, an Honorary Member of ESA, had been awarded the above honour. It is Canada's highest award for those advancing science via communication media.
9. ESC Scholarship: P. Everson, a student of the Department of Entomology, U of A, alumnus was awarded one of the two scholarships given this year.
10. Alberta Federation of Naturalists: The editor of "Alberta Naturalist", published by the above organization, wishes to be kept aware of ESA meetings. The secretary/treasurer is to keep the Federation so informed.
11. Entomological Priorities: H. R. Wong had received a letter from J. McNeil, Science Policy-Public Education Committee, ESC, asking ESA to undertake a study of entomological priorities in Alberta. Wong had already asked M. Dolinski to head such a study. The item was to be taken to the general meeting.
12. 75th Anniversary Commission (Alberta): ESA was invited to participate in associated activities for the above event. H. R. Wong had already replied stating that the matter would be placed before ESA general membership at the annual meeting. The executive were, in general, not enthusiastic.
13. Plastic boxes: D. A. Craig reported that almost all the plastic boxes had been sold. It was agreed that ESC should be approached again for a grant to help cover costs of purchasing more boxes.
14. Nominating Committee: As W. A. Charnetski, Vice-President ESA, was absent due to illness, H. R. Wong and K. W. Richards agreed to form the above committee.

The meeting adjourned at 19:55 hours. Moved H. R. Wong, seconded K. W. Richards. Carried.

MINUTES OF THE 27TH ANNUAL BUSINESS MEETING OF THE
ENTOMOLOGICAL SOCIETY OF ALBERTA

October 19th, 1979

The 27th Annual Meeting of the Entomological Society of Alberta was held at the J. Janzen Nature Centre, Edmonton, October 19 - 20, 1979. The meeting commenced at 4:30 p.m.

1. Minutes: B. S. Heming moved, S. Ashe seconded that "The minutes of the 1978 Annual Meeting of the ESA be adopted as printed and circulated".
Carried.
2. Interim Treasurer's Report: D. A. Craig reported a bank balance of \$1938.69 as of October; \$254.66 had been paid out for the 1978 Proceedings. Postage for that cost \$44.49. Over \$1000.00 had been taken during registration for the present meeting and banquet. In general a healthy financial situation. Moved by H. G. Philip, seconded by J. Shemanchuk "That the report be accepted". Carried.
3. Membership Report: D. A. Craig reported that there were 90 paid-up members, 15 not paid-up, five new members, three honorary members and three library members, for a total of 116 members.
4. ESA and ESC Honours: It was announced that two nominations for ESA Honorary Membership had been made and these would be acted upon when suitable during the present meeting. One nomination for an ESC award had also been made.
5. ESC Scholarships: B. S. Heming reported that there had been six applicants for the scholarships. Four of these applicants were good. Two scholarships were awarded, one to P. Everson, University of Alberta.
6. ESA Prizes: There were no students of sufficient calibre to warrant awarding the prizes this year.
7. Zoological Record: The publishers of Zool. Record wrote thanking ESA for the donation last year. After very brief discussions regarding the better recent performance of Zool. Record, J. Shemanchuk moved, B. S. Heming seconded, "That the ESA contribute \$25.00 towards the cost of producing Zoological Record". Carried.
8. Nominating Committee: As W. Charnetski, Vice-President was absent due to illness, it was announced that H. R. Wong and K. W. Richards had agreed to handle nominations.
9. Resolution Committee: It was announced that J. Muldrew and J. Drouin had agreed to serve on that committee.
10. Insect Collection Committee: M. Steiner announced that she had coopted J. Ryan and G. Hilchie to serve on the committee for the duration of the meeting.

11. William Gordon Award to E. Gushel: It was announced that Gushel had been awarded the above honour for his high quality scientific presentations via the communication media.
12. Canada Biting Fly Centre: D. A. Craig reported that the Centre was in operation in the Department of Entomology, University of Manitoba. Dr. R. Brust was Director, Dr. M. M. Chance, Manager. The Centre had funds for a two year feasibility study and Dr. Chance had already begun travelling to interview biting fly workers.
13. Environmental Conservation Authority: J. Shemanchuk, as ESA representative, reported. The major work this year was investigation of the use of sewage as irrigation for production of food and fibre. Problems of disposing of large volumes of sewage from cities might be overcome by using oil and gas pipeline technology.

The first part of the business meeting concluded at 16:55 p.m.

* * * * *

The second part of the meeting convened at 10:30 a.m., October 20.

14. Biological Survey of Canada: G. E. Ball, although no longer a member of the directing committee, reported that "Canada and its Insect Fauna" was complete and had been published as a Canadian Entomological Society Memoir No. 108, 1979. The Survey was now involved with a second contract dealing with a bibliography of the Insect Fauna of the Arctic.
15. Report of Insect Collection Competition Committee: M. Steiner reported for that committee and the report is published in these Proceedings. M. Steiner moved, seconded by S. Berté "That the report be accepted". Carried.
16. Report of Committee for Alternative Methods of Encouraging Amateur Entomologists: M. Dolinski reported that he and K. Parker had attempted to initiate a contest in high school. A preliminary draft of the rules of the contest were posted in the Department of Entomology - there was no comment. Of ten persons approached personally only one graduate student agreed to help.

It was clear that unless enough committed persons were forthcoming, any attempt at further encouragement should be forgotten for the present. Moved by M. Dolinski, seconded by H. Philip "That the report be adopted". Carried.

In discussion following:

R. Leech asked whether this meant that the Insect Collection Competition continued. It was generally indicated that this was so.

J. Ryan mentioned that contact could be made with interested persons via the Janzen Centre and through Dr. L. Fenna, Ministik Hills.

A general discussion ensued about Society members visiting schools. M. Steiner commented that we did not have enough committed persons. B. S. Heming felt such visits would be of limited value as amateur entomology is not a Canadian tradition and all teachers and students want is to be entertained. W. Nelson did not want to see the collections from Olds discouraged. A. Schaaf pointed out that there were two questions to be answered, one was the doubtful value of the mailing of notices, the other was the actual competition. R. Leech commented that he had been involved in mailing a brochure Canada-wide and there had been little response. He found personal contact to be far better for generating interest.

D. A. Craig commented that continuation of the competition might be academic as the supply of plastic boxes was finished.

G. E. Ball answered that the ESA should not forget that we are primarily entomologists, not box sellers and we should continue to sell boxes or whatever to encourage entomologists.

Moved by G. E. Ball, seconded by B. S. Heming, "That the status quo be maintained regarding the encouragement of amateur entomologists".
Carried.

H. R. Wong asked R. Leech if he would mind acting as chairman for the above committee. He agreed.

New Business

17. 1980 Meeting: ESA had been invited to hold a joint meeting with the Entomological Society of Saskatchewan in Saskatoon, October, 1980. Moved by J. Shemanchuk, seconded W. G. Evans "That ESA accept the invitation". Carried.
18. 75th Anniversary Commission of Alberta: ESA had been invited to participate in activities to celebrate the 75th anniversary of confederation for Alberta. The executive recommended no action. After some facetious discussion it was moved by B. S. Heming, seconded by H. Philip "That no action be taken". During discussion of the motion J. Shemanchuk said we should be taking advantage of the offer. J. Gurba indicated that funds were available and this was further expanded by J. Drouin. After a suitable pause the above motion was withdrawn by the mover and seconder.

Moved by J. Shemanchuk, seconded J. Gurba "That the 1980 ESA Executive investigate the possibilities of taking part in the 75th Anniversary, to the advantage of the ESA". Carried.
19. Youth Science Foundation: ESA has been asked to join this organization which sponsors Science Fairs. There would be a fee of \$75.00.

K. W. Richards explained some points about the YSF and Science Fairs and indicated that as far as he was experienced YSF had done little.

S. Ashe asked whether this organization was likely to be advantageous for ESA. K. W. Richards replied that it might be a means of making contact with Science Fairs.

Moved by K. W. Richards, seconded J. F. Landry "That ESA not join the Youth Science Foundation". Carried.

Moved by M. Dolinski, seconded K. W. Richards "That the ESA investigate the possibility of providing funds to local Science Fairs for an award to the best entomological display at each".

During discussion G. E. Ball said that the motion was fine in principle, but what kind of award was envisaged? K. W. Richards replied that a plaque or book worth \$25.00 was usually awarded.

The question was asked and the motion. - Carried.

20. Entomological Priorities in Alberta: J. McNeil, Science Policy-Public Education Committee, ESC, had asked the ESA to embark on listing important entomological areas that needed investigation in Alberta. ESQ had done so last year. M. Dolinski had already agreed to chair a committee to do this and was to coopt members as necessary. Such a study would run parallel to the proposed ESC study on losses of food and fibre to insects in Canada.

21. Regional Directors Report: J. Shemanchuk presented his report which is printed in these Proceedings.

J. Shemanchuk moved, seconded by M. Dolinski "That the report be accepted". Carried.

22. Honorary Memberships: The results of a vote on an honorary membership nomination were announced. J. Gurba was unanimously elected. R. Larson was then also unanimously elected as an honorary member.

The material submitted with the nominations is published in these Proceedings.

23. Nomination Committee Report:
R. H. Wong reported.

President
Vice-President
Secretary/Treasurer
Editor
Regional Director
Directors

W. A. Charnetski
H. Philip
M. Steiner
B. S. Heming
J. Shemanchuk (1977-1980)
M. Dolinski (1978-1980)
K. W. Richards (1979-1981)
G. Pritchard (1980-1982)
J. Sutcliffe
J. Spence

Auditors

Moved by G. E. Ball, seconded H. Cerezke "That nominations cease".
Carried.

24. Resolution Committee:
J. Drouin reported:

Whereas the success of the 27th Annual Meeting of the Entomological Society of Alberta is due to a large extent to the contribution of the following, be it resolved that letters of appreciation be sent to:

- (a) Drs. Kay and George Ball for their hospitality in providing their residence for the lunch on October 19 with the request that they forward our thanks to Jocelyn Hocking, Ruth Craig, Karen Heming, Margaret Wong, Debbie Spence, and Fran Leggett for their help in preparing the delicious lunch.
- (b) Dr. George Ball for his entertaining and interesting talk "Naturalists on the Rio Demiti" at the banquet.
- (c) Mr. Cam Finlay and Mr. Bill Reynolds of the John Janzen Nature Centre for their kind assistance.
- (d) The Department of Entomology, University of Alberta, for providing the use of Athabasca Hall Annex for the reception on October 18.
- (e) Dr. Bill Samuel for a most informative keynote lecture on "Ticks, mites and lice and other things nice".
- (f) Dr. Bill Nelson for taking the traditional candid photographs that are part of the proceedings.
- (g) Dr. S. R. Loschiavo, President-Elect, Entomological Society of Canada, for his report and participation at this meeting.

Be it further resolved that a note of thanks be tendered to the executive and members who were involved in the preparation of the meeting and program.

Other Business

Moved by W. G. Evans, seconded J. Ryan.

BE IT RESOLVED:

That the Entomological Society of Alberta express its support for appropriate controls over sales of pesticides through a licensing and recording system, and urge the Alberta Cabinet to expedite approval of the Agricultural Chemicals Act Regulations now under consideration.

There was a brief discussion and the motion was Carried.

The Meeting adjourned at 12:15 p.m.

Nomination of
MR. JOSEPH B. GURBA
for Honorary Membership
in the
Entomological Society of Alberta

Joe Gurba was born in 1922, and at the tender age of 20, taught school for one year at Hollow Lake, Alberta. He joined the RCAF in 1943, returning to Hollow Lake school in 1945 to teach once again. After spending some time on the family farm and at the Canadian Vocational Training School, Joe started his Bachelor of Science (Agriculture) education at the University of Alberta in 1947. During the summer breaks, Joe worked for the Alberta Department of Agriculture as a weed inspector. It was during the summer of 1949 that Joe was introduced to entomology when he was required to mix poisoned bait for grasshopper control. Joe was assistant District Agriculturist at Vegreville in the summer of 1950, and after receiving his B.Sc. (Agriculture) degree, became District Agriculturist at Myrnam.

In 1952, Joe joined the Field Crops Branch as assistant to the Supervisor of Crop Protection. He remained in that position until 1957 when he became the first Supervisor of Crop Protection and Pest Control Branch, a position he has maintained to the present.

During the late fifties and sixties, Joe was involved in evaluating insect control products and in advising farmers and ranchers on the proper control of insect pests. In cooperation with Dr. M. Khan (C.D.A., Lethbridge), Joe investigated the feasibility of eradicating cattle grubs from the Forestburg area. They were able to eradicate warbles from the centre of the control project area, and this project was responsible in part for the evolution of the Warble Control Program in the late sixties.

In 1958 and 1959, Joe became involved with black flies in the Athabasca and Vermilion river areas in response to complaints by local cattle producers of production losses due to black fly attacks. These early investigations, along with those of Agriculture Canada scientists Kurt Depner, Joe Shemanchuk and Hartley Fredeen, helped set the stage for the eventual establishment of the intergovernment Black Fly Control Research Project in 1973, set up to solve the black fly problem, and resulting in the recent registration of methoxychlor for larviciding under permit.

As head of the Crop Protection and Pest Control Branch, Joe was responsible for the establishment of the Provincial Supervisor of Entomology position currently occupied by Mike Dolinski and formerly held by Lloyd Peterson and John Proctor. He was also instrumental in the formation of the Plant Industry Lab. and in hiring its first entomologist, the late Bob Dixon. As head of the Pest Control Branch, Joe has fully supported and promoted economic entomological research, demonstration and extension programs within A.D.A. and in cooperation with Canada Agriculture and the University of Alberta, Department of Entomology. Joe has also provided initiative and input into drafting such legislation as the Agricultural Pests Act and the Agricultural Chemicals Act. Grasshoppers, cattle grubs, and European and native elm bark beetles are named pests under the Agricultural Pests Act. Although Joe maintains a strong interest in vertebrate pest control, for example Alberta's

rat control and rabies vector control programs, Joe has made many valued contributions to entomology in Alberta, many of which as an active member for 24 years in the Entomological Society of Alberta.

As a member, Joe has held the following positions:

1958	Secretary
1960)
1963) Director for Edmonton
1966)
1969	Vice-President
1970	President
1974	Chairman, Finance Committee
	Joint Meeting ESC - ESA

Joe has also been an active member of the Canadian Pest Management Society of which he is President. He has also been an active member of the Western Committees on Crop Pests and Livestock Pests, where he has carried forth the concerns of Alberta farmers, ranchers, and entomologists regarding various aspects of insect pest control.

This nomination is supported by the undersigned:

H. G. Philip
M. G. Dolinski
M. Y. Steiner

Seconded Geo. Ball

Unanimous acceptance.

Nomination of
DR. RUBY I. LARSON
for Honorary Member
of the
Entomological Society of Alberta

Dr. Larson has had a very interesting, distinguished, and honored career, climaxing, I suppose, with the receipt of an Honorary Doctor of Sciences Degree in 1977 from the University of Lethbridge. In gathering information to prepare a biography of Dr. Larson to support her nomination as honorary member in the Entomological Society of Alberta, one ultimately ends up with Volume 9(2) of the Publication *Quaestiones Entomologicae*, an issue dedicated to Dr. Larson. After reading the editorial by the late Dr. Brian Hocking, one cannot do better than to quote from this editorial, which is as complete a biography as anyone could prepare for Dr. Larson. Therefore, in Dr. Hocking's words:

"Dr. Ruby Larson has always been an enthusiastic person. Her first employment was as an impoverished country school teacher in Saskatchewan. From that position, she took a Summer School course in biology from (the late) Dr. J. G. Rempel, then Professor of Biology at the University of Saskatchewan. This convinced her that biological research was the most exciting occupation in the world. While a student at the university, she found summer employment counting wheat chromosomes at the Swift Current Experimental Station of the Canada Department of Agriculture in connection with the cereal breeding work being conducted there by A. W. Platt and C. W. Farstad. This eventually lead to her appointment as a cytogeneticist and her work in this field in relation to the resistance of plants to insect and other damage is well known. Nobody, however, who has been in contact with Dr. J. G. Rempel could escape some enthusiasm for entomology. These two enthusiasms constituted only a part of the total enthusiasm which Dr. Larson put into the formation and operation of the Junior Science Club of Lethbridge. Characteristically, she attributes the success of this club to the young people who joined it but, going back to first principles, the young people who joined it did so because of her enthusiasm. This enthusiasm also drew collateral support for the club from her colleagues at the Canada Department of Agriculture Research Station and elsewhere.

"The authors of all three papers in this issue of *Quaestiones Entomologicae* were members of Dr. Ruby Larson's Junior Science Club of Lethbridge. As she puts it, the remarkable thing is not that they became entomologists, that was inevitable, but that all three of them have followed their first main interest; David Larson with his beetles, mainly because of their beautiful structure; Ken Richards with his bees, partly because of his

association with Gordon Hobbs; and Joe Shorthouse with his insect galls The breadth of interest in the club is reflected in the fact that doctors, teachers, architects, and engineers, in addition to entomologists, have come from among its members. It is for this and other reasons that we are pleased and proud to dedicate this issue of Quaestiones Entomologicae to Dr. Ruby Larson, personality, teacher, scientist, biologist, cytogeneticist, and entomologist; professional and amateur, in the best senses of both words in all of these fields.

In addition to Dr. Larson's activities in the Junior Science Club, she has been responsible for the Lethbridge Branch of the AIC, undertaking sponsorship of the Lethbridge and District Science Fair. She urged AIC members to accept the project as an important community service and did the initial organizing work. She was its first chairman and has maintained an active interest in the Fair since then.

Dr. Larson has supported foster children in other countries for many years, enabling some of them to continue their education to the university level. She has travelled to South America and Asia to encourage these foster children. In 1975, her community service was recognized locally when the YWCA named her Working Woman of the Year.

Dr. Larson was a charter member of the Entomological Society of Alberta and continues her membership in the Alberta Society, the Entomological Society of Canada, as well as in the following learned organizations:-

American Association for the Advancement of Science
 American Genetic Association
 Genetics Society of America
 Genetics Society of Canada
 Agricultural Institute of Canada
 Alberta Institute of Agrologists

Dr. Larson should be recognized by the Society for her contributions to entomology as an amateur, not as a professional.

The following hereby support the nomination of Dr. Ruby I. Larson for Honorary Member of the Entomological Society of Alberta:-

Signed: W. A. Charnetski
 J. A. Shemanchuk
 K. W. Richards

Entomological Society of Alberta
Financial Statement for 1979

Receipts

	<u>Subtotals</u>	<u>Totals</u>
Bank balance, January 1, 1979	\$1756.76	
Petty cash, January 1, 1979	15.91	
	<u>\$1772.67</u>	\$1772.67
Memberships: 1978 - 2 @ \$4.00	8.00	
1979 - 88 @ \$4.00	352.00	
1980 - 7 @ \$4.00	28.00	
1981 - 1 @ \$4.00	4.00	
	<u>\$ 392.00</u>	\$ 392.00
Library Members:		
North Carolina State	3.99	
University of Wyoming (1980)	4.69	
	<u>\$ 8.68</u>	\$ 8.68
Sale of Proceedings:		
Schierenberg	80.00	
Swets	21.71	
	<u>\$ 101.71</u>	\$ 101.71
Donations: (Rosenberg)		\$ 1.00
Bank interest:		
April 30	18.79	
October 31	27.14	
	<u>\$ 45.93</u>	\$ 45.93
Insect Diagnostic Service (The Bay)		\$ 200.00
Registration for meeting and banquet		\$ 987.00
Sale of wine etc. at reception		\$ 38.50
Total receipts for 1979		\$3547.49

Disbursements

Proceedings for 1978	\$ 254.66	
Postage for above	44.49	
	<u>\$ 299.15</u>	\$ 299.15
Registration of Society with Alberta Consumer & Corp. Aff.		\$ 3.00

Xerox charges:

2.14	
2.14	
4.41	
<u>\$ 8.69</u>	\$ 8.69

Insect Collection Competition Prizes
 Zoological Record Donation (1979)
 Receipt books, etc.

\$ 90.00
\$ 25.00
2.89

Annual Meeting:

Liquor permit	5.00	
Liquor for reception	80.90	
Food for reception	38.56	
Soft drinks	8.60	
Rental of Janzen Centre	126.00	
Deposit for banquet	100.00	
Banquet for 54 (Inn on Whyte)	635.30	
	<u>\$ 994.36</u>	\$ 994.36

Total Disbursements for 1979

\$1423.09Balance Summary

Total Receipts	\$3547.49
Total Disbursements	<u>1423.09</u>
	\$2124.40

Petty Cash, December 31, 1979	4.42
Bank Balance, December 31, 1979	<u>2119.98</u>
	\$2124.40

Prepared by:

D. A. Craig
 Secretary/Treasurer

Approved by ESA Auditors

James F. Lalor

John R. Spencer

REPORT OF THE REGIONAL DIRECTOR

As Regional Director, I attended the Governing Board meetings on September 30, October 1, and October 4, 1979, held at Vancouver, B. C. This was the only meeting held since the last meetings of the Entomological Society of Alberta. The winter meetings of the Governing Board have been discontinued and were replaced by executive meetings.

Annual Meeting

The Annual Meeting in Vancouver was attended by about 120 delegates and was considered a success. The last day of the ESC meeting was held jointly with the Northwest Conference on Mosquito and Vector Control.

Future ESC Meetings

- 1980 - Entomological Society of Quebec and ESC - Chateau Frontenac, Quebec City, Quebec - October 6-8. - Theme - "Overwintering Strategy".
- 1981 - Entomological Society of Alberta and ESC - Banff Centre, Banff, Alberta - October.
- 1982 - Entomological Society of Canada and Entomological Society of America - Toronto, Ontario. - ESC - Responsible for local arrangements - ESA - Responsible for Program.
- 1983 - Entomological Society of Canada and the International Congress of Professional Biologists - This is not firm but a Steering Committee has been appointed.

Finances

- a) ESC is in good financial position. The Executive will investigate the legal aspects as related to the use of income derived from investments for operating costs.
- b) There will be no increase in membership fees for the next year.
 - Subscription rates will be increased from \$40 to \$45.
- c) A motion was passed that all expenses of Governing Board members attending the next Annual Meeting may be paid by the ESC.
- d) Budgeted for a deficit of \$20,440.

Publications

- 218 manuscripts were received in the last year.
- Rejection rate was 23% which is higher than in the previous year.
- A change in dealing with the publication of Notes has been made in the cover of the Canadian Entomologist.
- The Publications Committee recommend that the ESC continue publication and not turn it over to NRC.
- There was no reason to change publishers at this time.
- A suggestion was made that a statement be included in the "Notice to Contributors" requesting Abstracts in English and French.

Bulletin

A recommendation was made that the Bulletin be published once a year - shortly after the Annual Meeting and a mimeographed Newsletter be produced quarterly.

Photo Salon

The largest display to date covered a very wide range of subjects.

Science Policy - Public Education

- A career brochure has been published.
- A report of the flow of entomological information within the Research/Extension System was tabled and discussed. The recommendations are to be reviewed and comments are to be funnelled to the Executive of ESC by 1 November 1979.

Grant Proposal to Department of Supply and Services

A grant proposal was prepared by Dr. F. McEwen for submission to DSS on a proposed study on the losses due to destructive insects. This was reviewed by the Governing Board and approved. Dr. McEwen will chair a sub-committee and will oversee the transmission of the proposal to DSS. The estimated cost of this study is in the order of \$100,000.

Biological Survey of Insects in Canada

- Canada and Its Insect Fauna, Mem. Ent. Soc. Can. 108: 573 pp has been published.
- A Review and Syntehsis of Knowledge on Northern and Arctic Insects is being prepared.

B-Laws

Some changes were recommended but these changes were referred back to the By-Laws Committee for further study.

Fellowships

Dr. Chant questioned why fellowships were limited to members of the Society. He felt there were worthy entomologists that were non-members, e. g., Holling, Watt, Welch. After some discussion this was turned over to Committee for further consideration.

1979 Fellowships were:

Dr. G. E. Bucher
 Dr. W. G. Friend
 Dr. H. R. MacCarthy
 Dr. A. W. MacPhee
 Dr. A. J. McGinnis
 Dr. D. P. Pielou

Officers

President - Dr. W. J. Turnock
 First Vice President - Dr. S. Laschiavo
 Second Vice President - G. B. Wiggins
 Directors at Large - W. G. Friend
 M. D. Proverbs

Awards

Gold Medal - Dr. G. P. Holland

 C. Gordon Hewitt - Dr. J. N. McNiell

Junior Achievement Award

This award was established on a permanent but not regular basis and the name was changed to "Achievement Award."

Scholarships

Two scholarships of \$500 each were awarded as follows:--

1) Mr. P. R. Everson
University of Alberta

and

2) Miss P. W. Shefter
University of Toronto

These were selected from six candidates.

The scholarship fund stands at \$9,367.00. Requests for contributions were made at the meeting. Also, a reminder to all members will be sent out with the next newsletter.

Employment

The employment committee published a booklet containing resumés of ESC members that are searching employment and these booklets were sent to all prospective employers.

A budget of \$625.00 was approved to publish the second edition.

The effect of this effort is unknown at this time. It is too early to tell.

The Governing Board approved the sale of volumes of Can. Ent. to the Quebec Amateur Entomological Society for the price of \$10.

J. A. Shemanchuk
Regional Director
January 25, 1980

JAS/cs

REPORT OF THE INSECT COLLECTION COMMITTEE

A total of six collections were entered in the Insect Collection Competition. All were in the Open Challenge section and were submitted by Olds College students. Competition notices were mailed out for distribution to Olds College, Northern Alberta Institute of Technology, the school system, boy scouts and girl guides, and the Science Council Newsletter. Since many students are known to make collections, it is apparent from the lack of response that other forms of encouragement are required to entice students to enter their collections in the competition.

Results of the 1979 competition were as follows:

Open Competition

1st Prize - Ken Girard, Olds Agricultural & Vocational College
2nd Prize - L. C. LaRose, Olds Agricultural & Vocational College
3rd Prize - Erick Dyck, Olds Agricultural & Vocational College

There were no entrants in the Senior or Junior categories.

My thanks to Mr. Jim Ryan and Mr. Gerry Hilchie for assisting in the judging.



M. Y. Steiner
Chairman
Insect Collection Competition
Entomological Society of Alberta

MYS/pk

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