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Twenty-fifth Annual Meeting

of the

ENTOMOLOGICAL SOCIETY

of

ALBERTA

October 6-8, 1977

Olds College

Olds, Alberta

PROCEEDINGS OF THE 25TH ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF ALBERTA

OCTOBER 6-8, 1977

OLDS COLLEGE

OLDS, ALBERTA

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PRESIDENT'S REMARKS

B. HEMING

Ladies and Gentlemen:

Welcome to the 25th annual meeting of the Entomological Society of Alberta and to Olds College.

One would hope that the silver jubilee meeting of a society such as ours--particularly when occurring at the same time as that marking 25 years in the reign of Queen Elizabeth II--would be a time for celebration and rejoicing. However, no stamps have been issued in our honour, no commemorative medallions struck on our behalf, nor congratulatory letters received from Idi Amin or other people of note.

Instead, our 25th has been a quiet, rather unremarkable year. Job prospects for graduating entomologists are still few and far between and many of our older professional members are still planning to retire early because of generous severance allowances and probably because of unacceptable working conditions.

It might be worthwhile on completion of our first quarter century as a society, to recall why we organized in the first place. According to the minutes of our first annual meeting (in October, 1953) we did so to foster "entomology for its own sake" and to encourage exchange of information about insects between students, amateurs, and professionals.

In our constant, albeit understandable, worry for job security or lack of jobs, we often forget what first got most of us into entomology: an intense childhood interest in insects. One would think that this interest would be easy to maintain since most of us get paid for doing what originally began as a hobby. After all, our more long-standing amateur associates maintain it even though they have to earn their living in other ways. What they can accomplish with this enthusiasm has been ably outlined by Dr. Riegert.

How long has it been since any of us felt that heart-stopping "buck fever" we used to feel when "hovering" with extended net over a specimen of a species we knew to be rare? How long has it been since any of us stayed up all night waiting for an insect to mate or lay its eggs? How long has it been since any of us forgot about the weekend in an intense desire to collect the results of a critical experiment? Probably, for most of us, very long indeed.

What I am hoping is that some of the enthusiasm of our amateur colleagues will rub off on us. It might be well if we more often ignored some of the more ridiculous directives raining down on us from our often sorely-confused administrators--people too often having little understanding or appreciation of research, teaching, learning or enthusiasm of one's work.

May we, in our next 25 years, start to "foster entomology for its own sake" again--as we originally intended to do, and as many of our new graduate students, 'though unassured of any job when finishing--are doing.

PROGRAM SYNOPSIS

THURSDAY EVENING

7:00	Executive Meeting
7:30- 9:30	Registration and Reception (Rotunda - Duncan Marshall Place)

FRIDAY

8:30	Registration Continued (Rotunda - Duncan Marshall Place)
	Meetings: Amphitheatre - Duncan Marshall Place
9:00	Introduction - Dr. B. Heming
9:15	Feature Speaker - Dr. P.W. Riegert
10:45-12:00	President's Remarks Business Meeting
1:30- 4:30	Submitted Papers

FRIDAY EVENING

6:00	Socialize Dinner	GUEST SPEAKER J.B. Gurba, Head Crop Protection & Pest Control Branch Alberta, Agriculture

SATURDAY

9:00-10:00	Submitted Papers
10:30	Business Meeting
12:00	Adjourn

AMATEUR ENTOMOLOGY--METAMORPHOSIS OR DIAPAUSE

P.W. Riegert
Department of Biology
University of Regina

Every story must have a beginning and in our society that often means or includes a fixed point in time. Therefore, permit me to fix a date for my story today, a story of professionalism by amateurs, in entomology. Return with me to a cloudy Friday night, slightly more than 115 years ago. On this evening of September 26, 1862, ten ordinary citizens of Upper Canada met at the house of Professor Croft in Toronto, to discuss their favourite subject--insects. On this occasion, differing from many meetings held previously, they took a new tack. This was the night of metamorphosis, for on this date these men became professionals, for they founded the Entomological Society of Canada. Their action on this night was formally documented as a Society on April 16, 1863 in Toronto, and boasted a charter membership number of twenty-five.

Who were these individuals who were devoted to the science of entomology? One hundred and fifteen years ago there were at least 36 known devotees of 'insectology' in Upper Canada and an unknown number scattered across the western plains and mountains. Of the 36 there were four theologians, two medical doctors, two military men, two professors, as well as bankers, pharmacists, geologists, civil servants, and railroaders. Four women complimented the ranks of this initial group. It will be forever to the credit of entomologists, and entomological societies, that the finger of sex discrimination has never been pointed in their direction. Women have always been part of the cadre of insect fanciers, and have been accepted with equality by all, even as they are today.

In fact one of the earliest mentions made of entomological devotees goes back to the late 1700's. Lady Glanville, in Britain, was an avid insect collector, especially of the Lepidoptera. When she died and left her property to specified out-of-the-family recipients, her relatives attempted to have her declared insane and thereby negate her will. They reasoned that anyone who pursued insects--and can you imagine the sight of a lady of nobility with long skirts and other elegant attire, chasing a very mobile butterfly over an English countryside that may well have included hedges, brambles, bogs, and woods--that individual must certainly have been a bit 'short', mentally. However, her legatees got some good backing from eminent biologists, particularly from Dr. Sloan, the founder of the British Museum, and from Mr. John Ray, one of the original proponents of the concept of species and binomial nomenclature. They convinced the judge and jury of the Exeter Court that the Lady was indeed engaged in the quite respectable science of entomology, all clauses of her will were upheld. Today we have a species of butterfly, *Militoea cinxia*, the Glanville fritillary, named in honour of Lady Glanville who dared to be an entomologist.

But, what is an entomologist? We may have quite a discussion concerning and comparing the merits of college training in the natural sciences and that of the School of Experience. J. Alston Moffat, at the turn of the century described entomology as "the science that gives to insects long names, short lives, and a pin through the middle". Therefore, is it not logical to assume that people who are pinning insects and giving them long names, must be a bit 'queer', and to be treated with amused disdain?

Before the age of disciplined studies of economic entomology, toxicology, physiology, and the rest of the numerous '...ologies', the entomologist was a naturalist. In this guise he cast a long shadow, and cut quite a wide swath through societies' seemingly well-regimented routines. He, and she, created their own distinguished images which have received, and in some quarters still receive, considerable attention. The entomologist was viewed, and caricaturized, as a bespectacled, hunched-over, figure examining a pinned insect under a crude microscope; surrounded by a multitude of boxes of other pinned specimens, all confined in a small, dim, garret-sized room of questionable ancestry. On the other hand, these entomologists were also depicted as wild-eyed, clothes flapping, zealots racing over the countryside trying to capture a harmless butterfly and enfold it in the meshes of a huge net. Whatever image was conjured up in the minds of everyday people, the naturalist-entomologist remained the focus of a condescending attitude; regarded as enjoying a "frivolous pastime by a few harmless lunatics that might be better employed, but who are yet more to be pitied than blamed".

One of these 'harmless lunatics', an accountant in Ottawa, became the nation's First Entomologist. James Fletcher, whose insatiable interest in nature over-ruled his desire to keep ledgers, and won him an appointment as the first Dominion Entomologist of Canada on June 1, 1884. Here was an 'amateur' appointed to one of the most prodigious scientific positions in the Western World; a position which he held until his untimly death in 1908 and one to which he gave his undivided attention. It was also a position for which he gave his undivided attention. It was also a position for which he created a distinguished record of achievement in systematic and economic entomology.

But, one might add, that occurred in the 'good old days', when the country was young and nothing was routine or stabilized. An amateur naturalist in those days had everything going for him, little or no competition, and he could embark on any project concerning natural history and find it to be pristine and unspoiled. Despite the relative ease with which an amateur entomologist could satiate this interest in insects by collecting and naming those that were of particular interest to him, there still remained that inner drive and unbridled curiosity that was the mainspring in perpetuating the avocation that he enjoyed. Each and every amateur was filled with an all-consuming curiosity about the events of nature, and with an intense desire to learn more of natural beings and events. He pursued his chosen 'hobby' with an untiring zeal despite the hardships of long hours, no monetary returns, and the infrequent contact with other entomologists.

Recognizing the pros and cons of being a successful amateur entomologist in the late 19th century, and in the early 1900's, let us examine the record of some of these unsung pioneers in entomology. It will be impossible to include a comprehensive list of all of those engaged in entomological pursuits in Canada. Many of these are known to you or have espoused on other occasions by better and more capable men than I. Permit me to try to depict these men and women as pioneers of a pristine science, examine the methods they employed, and the interests they displayed in their studies of insects. Were they just indulging in a 'hobby', or were their efforts the 'anlage' and the basic elements on which the science of entomology has grown in Western Canada? Could, and did, their efforts metamorphose into a many facetted science or was all that labour merely a quiescent interlude of diapause?

Who were the entomologists during the period when the Canadian West was still the "Great Lone Land"? They were those men and women who were just plain folk and had other jobs and occupations than that of studying insects. They were the explorers, the missionaries, the fur traders, and the few bold settlers who ventured out west into the unknown. Most of these individuals turned to a study of entomology because they were personally affected by a pest species, or because the insects were showy and thus caught their attention.

Some of the many exploreres who fitted this category of individual, include the Norwegian John Monck who, in today's Churchill, Manitoba in 1619, complained bitterly of the savagery of northern biting flies and mosquitoes. Others who followed him at the Prince of Wales Fort were James Knight in 1717, and Samuel Hearne in the 1770's; both made the same complaint. Samuel Hearne also learned from the Chipewyan Indians of the epicurian delicacies of lice and raw caribou warble fly larvae; and of tainted bear meat when these animals gorged on the two-foot high windrows of Ephemeridae washed on shore of some northern lakes.

We can journey with Alexander Henry, Daniel Harmon, and Peter Fidler, who, at the beginning of the nineteenth century encountered grasshoppers in flight, blood engorging ticks, body biting fleas, and an overwhelming number of mosquitoes that drove both man and beast to distraction. Others like David Thompson, La Verendrye, and Alexander McKenzie were too busy exploring to do much 'entomologizing'; they merely sweated, swore, and swatted at the biting Diptera.

The aforementioned individuals were really not entomologists, not even amateurs as we know them today. They were merely observers who experienced the presence of insects. The real amateur of this period in history, were those who were not nomadic by nature or travellers by vocation. They were the Factors and workers at the Hudson's Bay posts, and the missionaries. These people had a home base where they had the time to let their curiosity of natural things lead them to a leisurely examination of objects and events that surrounded them.

There was the Rev. Thos. Woolsey at Edmonton House, who, in 1859 was overjoyed at the coming of spring and the capture of many species of butterflies that abounded there in April. The 'men of the cloth' were learned men, not only in theology, logic, and philosophy, but also in the natural sciences to which most had been exposed during their early school years. The Rev. Henry Matthews and his brother Joseph were the pioneer entomologists on Vancouver Island, having collected and identified 186 species of beetles by 1869. These were catalogued by J.L. LeConte, the expert beetle taxonomist in the United States. After 1882 Matthews was followed by the Rev. George W. Taylor whose energies and exuberance when catching butterflies knew no bounds. In 1884 he wrote:

> "Nearly 40 species may be marked abundant. A patch of blossom in May, covered with Blues and Frittillaries with an occasional Colias and two or three magnificent Papilio, is a sight such as an English entomologist never sees at home."

He was so enthusiastic about collecting that he never went anywhere without his cyanide bottle. While preaching a sermon in the Anglican Church in Nanaimo, he noticed a very desirable specimen of butterfly fluttering around the pulpit light. He calmly fished his cyanide bottle out of his pocket and with a few practiced passes he captured the insect; all the while continuing uninterrupted with his sermon. I have often wondered how much entomological theology that congregation was subjected to!

Nevertheless, the Rev. Geo. W. Taylor, amateur entomologist that he was, a professional one he became. In 1887 he was appointed by the British Columbia government to what may be termed the second highest entomological position in Canada. He became the country's first Provincial Entomologist; proof positive that an amateur's work was regarded as meritorious even by a provincial government.

There was also a third missionary on the Islands who was entomologically inclined. This was the Rev. J.H. Keen at the Metlakatla Mission on the Queen Charlotte Islands in the 1890's. He was the principal collector of insects at that time and one need only browse through the early volumes of the Canadian Entomologist to appreciate the expertise, dedication, and devotion he gave to the science of entomology. His many descriptions of the moths, butterflies, beetles and bugs attest to his all-round interest in insects; another metamorphosis to professionalism.

There were other missionaries and 'gospel riders' who were part of the western Canadian scene. Their entomological contributions cannot be counted in terms of insect captures, but rather in terms of insect bites. The Rev. John McDougall, Father A. Lacombe, and Father A.G. Morice left us a legacy of word descriptions of their travels and of the insects they encountered. However, for the most part these were accounts of torment by mosquitoes and biting flies. Many of you who are here today, and who have encountered the dense, fogging swarms of biting flies, especially in our northern regions, know that under those conditions entomology is a one-Order science the theme of which is simply--survival.

One of the earliest collectors of insects, and especially of the butterflies, was Archdeacon W.W. Kirkby. He was a most ardent naturalist and during his many trips from the Red River Settlement to York Factory, or to Island Lake or even to Fort Simpson, during the 1850-1860 era, there were few species of butterfly with which he was not familiar. Unfortunately almost all of his captures, his extensive collection of Lepidoptera, disappeared; except for a few scpecimens that he gave to Robert Bell of the Geological Survey of Canada and were deposited in the early version of the Canadian National Collection.

As mentioned earlier, many of the men of the Hudson's Bay Company were interested in insects. Chief Factors, such as John Rowand, William Christie and Richard Hardisty of Fort Edmonton, kept records of insect incidence. These were, for the most part, mere records of phenological importance rather than of entomological significance. Others, like George Barnston of Norway House, who, prior to 1860, was a diligent beetle collector--and old-time version of a modern-day George Ball--for not only did he collect ground beetles but a host of others as well, 79 species being verified by LeConte. Of course, not all of the beetles were captured at Norway House for some had a distribution range from Lake Winnipeg and Carlton House in Saskatchewan, to the McKenzie River and Great Slave Districts.

A.S. Cochrane, another employee of the Company, was also an avid beetle collector in the 1870's. LeConte identified 46 species which he collected in an area extending from Cumberland House and Reindeer Lake to Fort Chipewyan on Lake Athabasca. William Isbister, an employee of Nelson House contributed 51 species of beetles to the National Collection; insects that he collected near to, and north-west of, the Fort. It is safe to say that our knowledge of the presence and distribution of beetles in the northern areas of the Prairie Provinces, was promoted and extended farther by these amateur collectors than by the professionals of the Geological Survey of Canada. Of particular significance in the work of these amateurs is the information they have given us regarding the distribution of many of our economic species. For example, their captures of *Dermestes* beetles in all of the Forts of the Hudson's Bay Company as these stretched out over the wilds of western Canada, certainly indicates that stored product insects were a pest since the 1600's, and that infestations were spread by man as he proceeded westward into the uncharted wilds.

Of course, the land did not remain uncharted very long. The Canadian Pacific Railway was being pushed northward from Pembina to Winnipeg in 1877. The local citizens of that city were jubilant when the first locomotive came down the Red River on board the Selkirk in the fall of 1877. They were still more elated when tracks were laid on the ice of the river by the crews of John Ryan so that a locmotive could chug its way over, under its own steam, and be parked for the night on the prairies on Winnipeg's main street on December 29, 1879. Railroad centres were quickly established at Brandon in 1882, at Regina in 1883, and at Calgary in 1884. Engineers and their crews were the real travellers in those days and it wasn't long before some of them found an outlet for their interest in natural history.

Some of our most active and didicated entomologists were railroaders. Can you imagine an engineer piloting his smoke-and-steam behemoth over the prairies and mentally indexing every good collecting site en route? Then bringing his train into the station yard amid squealing brakes and clanging couplings he dismounts from the cab almost before the centipedal monster has come to a stop. Clutching a collector's vasculum and a giant net he hustles down the street, sweeping everything and everyone before him; startling the natives who are sorely concerned about his wild-eyed appearance and perhaps his precarious mental condition. Such a man could be found in many places on the western scene.

Winnipeg spawned a few early entomologists in its railway yards, notably L.H.D. Roberts and G. Shirley Brooks. Both were C.N.R. men, whose hobby was collecting insects, especially the butterflies. Beetles were also of interest and most of their material has been preserved, having been donated to the Manitoba Museum. The beetle capture records, together with ecological data, formed part of J.B. Wallis' book on the Cicindellidae; this work being a treasured and valuable treatise on tiger beetles. Wallis himself was an excellent entomologist who did not let his duties as a teacher and school inspector deter his zeal nor dampen his love for the science of insects.

In the early 1890's Alberta could also boast of its railroad entomologists. J. Bean of Laggan and A. Hudson of Midnapore, were enthusiastic Lepidopterists. Their collections, though extensive, were sent to and identified by U.S. experts but to date I have been unable to find out what became of the specimens. Perhaps some of you listening to me today may have further information concerning these two pioneers of your province.

Some of the most avid collectors and students of entomology were the urbanites. These were the city workers whose interests took them out of the usual city environment and into the country where the insects abounded. At the end of the 19th century we find such individuals as H.W. Boger of Brandon, who was so keen to study insects that he inquired of James Fletcher where he could buy a good microscope so as to examine and identify his captures more readily. Fletcher dissuaded him from buying a $500 microscope because he believed that Boger would get just as good use, or more, out of a good hand lens.

There also was L.E. Marmont of Rounthwaite, Manitoba, whose collections of beetles were quite extensive; when transferred to British Columbia, where he became the Reeve of Coquitlam, he continued his study but switched to the micro-Lepidoptera. For an amateur he had considerable professional stature as evidenced by his publications in the Jour. of the B.C. Entomological Society, and whose organization he served as President from 1921-1925.

British Columbia can rightly boast of its amateurs. I cannot hope to give you details of all but I do want to give you a look at a few individuals. R.V. Harvey, a school teacher in Vancouver and Victoria, was an ardent collector of Lepidoptera at the turn of the century. Then he

switched his interests to the Family Syrphidae. His written contributions to our knowledge of this Family are of lasting quality, even as is the Journal of the British Columbia Entomological Society; a Society which Harvey founded in 1902 and which he ran single-handedly for seven years.

George O. Day, a retired English banker, who at age 51 settled at Duncan, B.C., devoted almost all of his time to entomology, the Ent. Soc. of B.C. and sailing. He invented a unique way of setting the wings of the Lepidoptera, namely, by placing the wings of the specimens on the setting board under slips of glass hinged to the edge of the board; the weight of the glass being sufficient to hold the wings in place until dry.

Of course you always find the so-called 'characters' in any group or occupation. J.W. Cockle fitted this description. He owned a hotel at Kaslo in the Kootenays and also operated as a guide for anyone who wanted to pack into the mountains. He was a naturalist par excellence, knowing every shrub, tree, flower, and insect in the district. He knew more about ticks, tick-borne diseases, and parasitology than most of the learned, eastern medical doctors, collectively. He had lived in tick country all of his life and when tick paralysis, Rocky Mountain Spotted Fever, and tularaemia were all the rage in about 1900-1916, he was the man with the answers because he had collected the arthropods and the insects, and knew their life histories. James Fletcher asked him to write an article about ticks so that all might learn more about these creatures. This he did, but when the Dominion Entomologist read his story the details were so startling and bizarre that he refused to publish it. Cockle remarked, "... the average reader would consider that my imagination had probably superinduced a temporary attack of hallucination and in their opinion I should be immediately elected to the presidency of the Ananias Club." In later years all of the details that he had described were substantiated as fact.

T.K. (Tam) Moilliet was a displaced Englishman who arrived in Orillia, Ontario in 1899 rather than in South Africa where he could have gone to fight the Boer War. His trail led him through the wheat fields of Saskatchewan, the ore smelter at Trail, near-fatal poisoning with mercury, and a sheep ranch on the North Thompson River in British Columbia. He was an incessant collector of Lepidoptera, and had two species of butterfly, *Enypia moillieti* and *Epinotia scorsa* named by Blackmore and credited as 'firsts'. He was also the first one to find a rabbit dying of tularaemia and from it collected the rabbit tick, *Haemophysalis leporis palustris*, from which the disease-causing organism was isolated. His interest in natural history should perhaps not be regarded as unusual because Tam Moilliet was a direct descendant of the House of Darwin.

Today, in our 'liberated' world, when even the Gay people seek recognition (perhaps as a new species based on non-inheritable, behavioural, and acquired characteristics), let us as entomologists not forget our women. I will have time to mention only two. Mrs. Nicolls collected the Lepidoptera in the Columbia Icefields area in 1904-1907, for the British Museum. Her

captures are there today. Mrs. Marianne E. (Hippesley) Clark, by 1922, had captured a sufficiently large and diverse number of coleopterans from the Terrace, B.C. region, that it enabled her to publish a detailed list of her collection. By 1959 she had collected 659 species, some 150 more than was recorded for any locality in the Pacific Northwest. Alas, only two small store boxes of these rare and valuable specimens remained, but they were bequeathed to, and deposited in the collections of the University of British Columbia.

You here in Alberta, and in particular you of the Entomological Society of Alberta, have a rich heritage of amateur entomologists. There are many who have contributed so much to our knowledge and understanding of the diversity of the insect fauna in the province. Once more, I cannot possibly name them all, but let me start with T.N. Willing. He was a farmer in the 1880's who lived, worked, and collected insect and weeds, a few miles (or kilometres!) from where I stand today in Olds, Alberta. His vast knowledge of economic insects and weeds gained him recognition in the eyes of James Fletcher who recommended him for the job of Weed Inspector for the Northwest Territories. His insect collections are today incorporated in the Saskatchewan Museum, the University of Saskatchewan, and the National Museum. By diligence, hard work, and an unfailing interest in natural history he climbed the ladder of professionalism and became a Professor of Natural History at the University of Saskatchewan in 1915. What a remarkable metamorphosis of a man and his career, made possible only when he dared to learn from Nature's book.

Then there was Percy B. Gregson and Arthur D. Gregson, uncle and father, respectively of Jack Gregson who carved a niche for himself in the annals of tick paralysis when he worked at the federal Livestock Insect Laboratory at Kamloops. The elder Gregsons, living at Blackfalds were self-taught expert taxonomists and also Alberta's economic entomologists of the 1890's. Arthur Gregson gained some fame by collecting fleas for Lord Rothchild; also collected the type specimen of the black swallow-tailed butterfly, *Papilio nitra*.

Percy Gregson founded the North-West Entomological Society at Waghorn (Lacombe or Red Deer) in 1898. Not only was he a collector but a veritable enclyopedia of knowledge concerning noxious insects that infested field crops, gardens, livestock, households, and stored products in Canada's Northwest. He lectured to farmers, and especially to school children, about insects, their names, their destructive powers, and their control. He most vigorously promoted the science of entomology at regular meetings attended by other amateurs. He kept the N.W. Entomological Society going for five years; dissolved it in favour of the Alberta Natural History Society in 1902. As President of the old, and of the new Society, he also absorbed the debt of $40 that followed him into his new office.

Following almost in Gregson's footsteps was F.C. Whitehouse, a banker at Red Deer from 1904 to 1934. Entomology to him meant dragonflies, a group of insects that he studied in such detail as to permit him to

publish descriptive keys of the Odonata of British Columbia and Alberta. His continued interest in the group resulted in published lists, catalogs, and keys of the Odonata of Canada and Jamaica. He was much more than just an insect taxonomist for between he and Percy Gregson they were Alberta's economic entomologists, daily helping people combat the destructive action of a myriad of insect pests, until H.L. Seamand and E.H. Strickland arrived on the scene. However, Whitehouse's collections live on in the Provincial Museum, Victoria; the City Museum, Vancouver; and the University of British Columbia.

While Whitehouse was using his expertise in a study of dragonflies, another talented and expert amateur, F.C. Carr, was devoting his energies and his spare time to the study of Alberta's beetles. The Staphylinid and Curculionid families were his specialty and his extensive lists of beetles were published by the Red Deer Natural History Society. First he compiled a list of 500 collected species from northern Alberta, which by 1933 included more than 1400 from all parts of the province. The Entomology Department of the University of Alberta, and its many students, are the benefactors of his bequeathed 100,000 specimen collection.

Ladies and gentlemen, for every story that is told there are three or four that remain untold. For every amateur entomologist that I have mentioned, there are three or four that should have been named. However, I do them no less honour, nor do I denigrate their work. They should all receive our highest accolades.

Non-professional entomologists were the backbone of our science when the west was young. There were those who were especially gifted and who rose quickly to heights of scientific fame. Of these I have mentioned James Fletcher and the Rev. George Taylor. I would be sorely negligent if I did not mention him who lived to win the respect of all North American, and many European entomologists; and won him the title of "Dean of Western Canadian Entomologists". I refer to Mr. Norman Criddle. From a ploughboy at Aweme, Manitoba in 1890, he developed into a world recognized authority, especially of the Orthoptera, by 1930. His innate love for, and devotion to, all natural things, guided and tutored by an understanding mother, created not only an outstanding entomologist, but also an expert ornithologist, artist, botanist and poet. He was endowed with that characteristic which sets men apart from other life forms, and which makes or creates an amateur entomologist, namely, an enquiring mind. Criddle himself said it in rhyme:

> "How can I know what's only told
> Or take for truth an ancient creed;
> Somehow, I can only hold
> That Nature's book is best to read."[1]

No matter how intent and sincere were the minds that delved into the intricacies of the insect world, another attribute in their makeup was responsible for their metamorphosing into professionalism and which caused the blooming and fruition of entomology. They had the desire to 'spread

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* Courtesy of Miss Alma Criddle, Winnipeg, Manitoba.

the gospel', to let everyone know what they were doing and what they had discovered. The early collectors corresponded with a large number of people, they traded, bartered, sold, and borrowed specimens of insects in an international scientific game of "Show and Tell". Once more a few names come to mind.

E. Firmstone Heath of Cartwright, Manitoba, amassed one of the finest collections of butterflies in the country after he homesteaded on the Plains in 1882. His farm was isolated and he appropriately called it 'The Hermitage', or as James Fletcher described it "... six miles across the prairie from Cartwright, which is almost like six miles from nowhere". Despite the isolation he corresponded freely with all and sundry until failing health forced him to stop. Today the specimens he collected are in the museum of the Entomology Department of the University of Manitoba.

There was Kenneth Bowman, who by 1919 had recorded 500 species of macro-Lepidoptera and published lists thereof. By 1951 he had delved deep into the intricacies of the micro-Lepidoptera, 1800 species were gathered, many still unnamed and now in the Museum of the Entomology Department of the University of Alberta. Such a record is one of an amazing zeal, a free wheeling and dealing drive to appease an inner hunger of curiosity about nature. It is a memorable achievement of a metamorphosed amateur who dared to professionalize in natural science.

Furthermore, it is a legacy left to those who follow; left by an amateur who challenged others to follow, and to match or surpass the achievements that were made. Maybe that challenge is not too difficult to accept if we change our concept of insects; regard them not as mere objects of science, but rather as objects in which the "beauty of the flower in colour and form are combined with the poetry of motion". If an amateur entomologist, J. Alston Moffat, could describe his work in 1902 in the above words, does it not behoove us to add the same dimension, the same art, and the same thrill of work, in our entomological work of today?

By this time you may have made the assumption that all amateur entomologists were really only taxonomists or 'collectors'. In a sense that is true, but then is it not the avid collector, be it bottles or stamps, or kerosene lamps, that enable the collector to become the expert of that which he collects? Furthermore, is it not right and proper that we initiate the natural sciences with a study of taxonomy? How else can we relate to all other attributes of a species when its identity is unknown? The amateur entomologist of yesteryear, and today, has started right in his studies and has sparked the rest of entomological endeavour by so doing.

In fairness to many amateurs there were those whose interests in taxonomy were merely a prelude to economic entomology. They had to know the beneficial species and the noxious ones before they could devise control measures. There are many who come to mind, in addition to those whom I have mentioned already. But one must not overlook the merits of Hugh McKellar, the Chief Clerk (later known as Field Crop Commissioners) of the Territorial Government's Agriculture Department, whose job it was to know insects and control them within the province; Tom Wilson, who was

in charge of cleansing the orchards and educating the Indians in British Columbia's policy of promoting Indian Orchards; and the British Columbia Horticultural Board "Trio", Thomas Cunningham, J.R. Anderson, and R.M. Palmer, whose duties included the quarantine and inspection of all fruits and cuttings coming into the province. Without the assistance of these very capable men, agricultural production would have been decreased very substantially by the unchecked ravages of the many insect pests. The life of the farmer, the fruit grower, and the forester was considerably eased by having the very capable amateur entomologists solve their insect problems for them. Because these individuals cared about their fellow man and rose in defence of their neighbour against the insect enemies, it spurred governments on to take an active hand in entomology. It resulted in the establishment of the federal 'Division of Entomology' and its present-day melange of Research Stations. Positions as 'Entomologists' became available in governments at all levels, in industry and in Universities. Words like 'toxicologist', 'physiologist', and 'ecologist' became everyday words. However, let us not forget that it was the fertile and vigorous stem-cell of amateur entomology that gave rise to that polyembryonic and multi-variate clonal mass of professional entomology as we know it today.

With the metamorphosis seemingly complete, are we now at the end of the road, or are we at the beginning of a new cycle? Are we experiencing a diapause condition of amateur entomology, or even of all entomology? In some regions of Canada we are, indeed, in a state of diapause, but I am thankful that nowhere is it dead or dying. In some regions the amateur entomologist has come out of diapause and is very much alive and active. Three examples may illustrate this.

In Saskatchewan we find Ron Hooper, an evangelist who has criss-crossed the province many times, ever alert to the presence of butterflies. His recent book, "The Butterflies of Saskatchewan", is his testimonial to entomology, a publication which dedication, interest, and zeal, together with an abundant knowledge of insect life has brought to fruition.

In Quebec we find the Society of Amateur Entomologists. It is a dynamic group, some 250 strong, who have been publishing a very creditable entomological magazine, "Fabrieres". Although this is a mimeographed publication the calibre of the work, the details of descriptive taxonomy, and the many minutae of the general biology of insects attests to the zeal and professional expertise of its contributors.

In Alberta I find that the Entomological Society has fostered and encouraged the amateurs for many years. The creditable series of annual competitions among students to capture, identify, and exhibit insects as collections has kept the interest alive and flourishing. Do not let down in your efforts now, but strive for greater things. There surely are some naturalists left in this province, or in Canada generally, of whom we know nothing, but whose energies, ambitions, and desires need only to be tapped and directed so as to yield a rich return in entomological information.

Alas, there have always been those who have maintained an unquenchable thirsting interest in insects, but whose efforts were largely wasted because they chose to remain anonymous. A case in point is that of Mr. Hugh A. Gibbon of Miniota, Manitoba. Prior to his death in 1963 no one but his immediate family knew of his entomological work. He amassed a huge collection of Lepidoptera of some 15,000 specimens in 2,500 species. Many of these were local ones but he also gathered hundreds of exotic species from all parts of the world which he traded or bought as he saw fit. He communicated with no one and isolated himself in a room with his 'bugs' and alienated himself from his family. The collection was given away by his daughters after his death because they probably were relieved to be rid of that which seemed to have stood between them and their father for so many years. Fortunately the collection is now reposing in the Museum of the Entomology Department of the University of Manitoba. The potential for good is still there.

So let us, each one, go out and help our entomological fellow-man. Dig, snoop, and ferret them out for they are there. Continue your efforts with the school age population. Terminate the diapause of inactivity and the estivation of the unknown. Replace it with a burgeoning metamorphosis of activity that will lead to a zealous and enthusiastic re-birth of entomological endeavour. There is still much to be done. William Saunders summed it up admirably in 1884, and I can do no more than quote the master:

> "In concluding, permit me to urge upon you all renewed diligence in your studies of insect life; be patient and faithful in observing, be prompt in publishing the results of your observations. The field we labor in is so vast that life is too short to permit any one of us to do much, especially when the limited time is taxed by other pressing engagements. Nevertheless, let us do what we can to unravel the mysteries relating to these much-despised atoms of existence; the opportunity is ever before us, ... And when the brightness of the sunshine has faded, there are tribes equally numerous and attractive which rise not from their couch until their more obtrusive brethren have retired to rest. Whether it is ours to employ portions of the night or the day in this charming occupation, we shall not in either case fail to find manifested in beauty of form and in the instincts with which these tiny creatures are endowed, manifold evidence of the wisdom and goodness of the great Author of Life".

ABSTRACTS OF SUBMITTED PAPERS BY MEMBERS OF THE ENTOMOLOGICAL SOCIETY OF ALBERTA

OBSERVATIONS ON THE SEASONAL DEVELOPMENT OF THREE BIRCH LEAF-MINING SAWFLIES IN THE EDMONTON AREA (HYMENOPTERA: TENTHREDINIDAE)

H.F. Cerezke
Northern Forest Research Centre
Edmonton, Alberta

The life histories and seasonal development of three birch leaf-mining sawfly species (*Fenusa pusilla* Lepeletier, *Profenusa thomsoni* (Konow) and *Heterarthrus nemoratus* Fallen) were documented from collections made in the city of Edmonton and near Winterburn, Alberta, in 1977. The first two species were found most abundant and contributed to most of the leaf-mining damage. This complex of species attacking both newly formed leaves and mature leaves from spring to fall, add a new complication to the control of leaf damage on landscape birch trees. The larvae and characteristic damage of each species were illustrated and historical documentation of their recent spread into western Canada was reviewed.

LEAF PROCESSING IN ROCKY MOUNTAIN STREAMS, ALBERTA

R.A. Mutch
University of Calgary
Calgary, Alberta

During the fall and winter of 1975, the breakdown of autumn-shed willow leaves in two, second order mountain creeks, Twin Creek and Cabin Creek, in the Kananaskis valley, was determined using the litter bag technique.

In Twin Creek the breakdown of the leaves was significantly faster, ($P < 0.01$) than in Cabin Creek. Both microbial decomposition and invertebrate feeding were greater in Twin Creek. It was estimated that feeding insects removed 45% of the dry weight of willow leaves in Twin Creek. Nymphs of the stonefly *Zapada columbiana* Classen played a major role in the breakdown of the leaves. The very low dissolved orthophosphate concentration of Cabin Creek probably limited microbial decomposition in this creek.

GROWTH AND DEVELOPMENT OF *ARGIA VIVIDA* (ODONATA) IN HOT POOLS AT BANFF

G. Pritchard
University of Calgary
Calgary, Alberta

Samples of a population of *Argia vivida* Hagen larvae were taken at about monthly intervals from a series of warm sulphur pools at Banff, Alberta from June 1973 to December 1974. Changes in head capsule width and wing pad length in field-collected and laboratory-reared specimens show that the life-cycle is univoltine. Only the final (Z) instar can be recognized with certainty, but the population can be divided into size classes which are thought to correspond well with the last nine larval instars. Periods of rapid growth occur in the autumn and again in the spring. Larvae over-winter in the instars U, V, W, X, and Y and the major shift to the final instar occurs in March and April. Adults emerge from April to August. In the laboratory, growth is temperature dependent until the penultimate (Y) instar and this could be a factor in the field since, although larvae can exist year-round at a constant 26°, some larvae live in the cooler areas at the edges of the streams and pools. Entry to the final instar appears to require the long photoperiods that follow the vernal equinox.

AN ECOLOGICAL MODEL OF *AEDES VEXANS* POPULATIONS IN SOUTHERN ALBERTA

J.D. Slater
University of Calgary
Calgary, Alberta

A model describing the development of *Aedes vexans* is presented. Development is driven by temperature using a modification of the algorithm given by Stinner *et al.* (1975). Output from the model is compared with data obtained from field studies.

SHELTER DESIGNS FOR THE ALFALFA LEAFCUTTER BEE, *MEGACHILE PACIFICA* (HYMENOPTERA: MEGACHILIDAE)

K.W. Richards
Agriculture Canada, Research Station
Lethbridge, Alberta

Some of the criteria for evaluating shelter designs for the alfalfa leafcutter bee include wind turbulence, light intensity, heat build-up, and orientation patterns. Inside the shelters the two correlated components of bee flight, temperature and light intensity, changed throughout the day. Heat up to +20°C above ambient is trapped in parts of shelters and is probably lethal to early instar larvae. Temperature changes occurred throughout the day within hive tunnels. Wooden nesting material was cooler than polystyrene. Double-decker shelters and those with sails, which have large silhouettes, were superior for bee production, had less leaf piece drop, and reduced drift of bees within fields to those shelters closer to the ground. Shelters with orientation patterns (black and white vertical stripes) were superior to those without and induced bees to remain within the fields.

MEXICAN SPECIES OF *LOXANDRUS* (COLEOPTERA: CARABIDAE: PTEROSTICHINI): CORRELATIONS AMONG HABITAT, DISTRIBUTION PATTERNS MICROSCULPTURE, AND RECONSTRUCTED PHYLOGENY

G.E. Ball
University of Alberta
Edmonton, Alberta

Correlation between type of microsculpture and habitat suggests that the home of the ancestral stock of *Loxandrus* was savanna, or similar low, open alternately wet and dry areas in the tropics. Distribution pattern of the Mexican species suggests that the wide-ranging inhabitants of savanna, unshaded swamps, and coastal, shaded forest swamps (in contrast to those inhabiting the forest floor in rain forests) were the kinds of stocks involved in deployment of the various waves of dispersal of *Loxandrus* from its centre of origin. Presence in the West Indies as well as on the adjacent mainland of four species that inhabit open areas and coastal swamps is further evidence of vagility, and also evidence that these groups crossed salt water. The geographical range of the genus extends in the New World from eastern United States to the tropics of South America, and includes eastern Australia, New Guinea, and the eastern portion of the Indo-Australian Archipelago. The phyletic pattern of diversity suggests that the ancestral home was located in the tropics of South America, and that *Loxandrus* originated in late Mesozoic or early Tertiary time, before South America and

Australia had drifted far apart, and when the former continent was separated from Middle and North America by a sea barrier. From the South American centre, several lineages dispersed to both Middle America and to Australia. Evidently, the last group to disperse was the ancestor of that extant group that includes the structurally more primitive species, and this lineage displaced the most highly evolved stock from South and Middle America, whose descendants survive in southeastern United States and in Australia. The pattern of evolution involves dispersal, ecological shifts, redispersals, and replacement of lineages that evolved earlier by those that evolved later. This is essentially "the taxon cycle" described by E.O. Wilson and P.J. Darlington, Jr. Thus, the data on *Loxandrus*, being interpretable in terms of that hypothesis, lend support to it.

A NEW DESIGN FOR A RECORDING FLIGHT MILL

W. Stumpf
University of Alberta
Edmonton, Alberta

An apparatus was developed which would record the in-flight responses of tethered insects to airborne odors. It consists of a rotary flight mill within a circular aluminum chamber with a plexiglass top and bottom. The recording system incorporates a solid state infrared light emitter and detector as well as a compact, durable solid-state frequency-to-voltage converter (Analog Devices 451 J). A chart recorder attached to the system provides a permanent quantitative record of flight speed and duration. The electronic components have a fast response time and are therefore sensitive to subtle flight speed changes. The odor injection system consists of a 10 cc syringe by means of which gaseous volatile compounds are introduced directly into the relatively airtight flight chamber. Odor concentration within the chamber may be calculated. Recordings of responses to camphor of the white-spotted sawyer, *Monochamus scutellatus* (Say), were presented along with various characteristic flight speed patterns obtained in the absence of chemical stimulation.

EVIDENCE THAT ACQUIRED RESISTANCE OF SHEEP TO KEDS IS LOCAL--A RETRACTION

W.A. Nelson
Agriculture Canada, Research Station
Lethbridge, Alberta

Evidence is presented to show that the resistance of sheep to keds is local, and that the suggestion made at the 1975 meeting, that circulating antibody is involved in the resistance, is in error. The local nature of the resistance was shown by the successful maintenance of small sequential

populations, 4-6 weeks apart, within bags glued to the sides of sheep. Each area in turn became resistant and the resistance was histologically verified. These findings almost rule out the role of humoral antibody, but they do not rule out the possible role of cell-mediated immunity (CMI). Both CMI and chronic irritation are possibly involved.

EFFECTS OF THE ANTERIOR MIDGUT UPON THE DIGESTIVE ENZYMES OF *GLOSSINA MORSITANS MORSITANS* WESTWOOD (DIPTERA, GLOSSINIDAE)

J. Houseman
University of Alberta
Edmonton, Alberta

Homogenates of the starved anterior midgut, containing no visible traces of blood, inhibited *Glossina morsitans morsitans* trypsin and proteinase VI. Other digestive proteinases are not affected. The inhibitor has a molecular weight of approximately 8,000 daltons and is stable to acid, 1 M HCl, and heat treatment, 80°C. Higher levels of inhibitor are found in post-teneral flies compared to tenerals. The inhibitor is located in the lumen and does not inhibit bovine trypsin.

SOME EFFECTS OF PREVIOUS SOCIAL EXPERIENCE ON ADULT FEMALE HOUSE CRICKETS, *ACHETA DOMESTICUS* L.

D. Watler
University of Alberta
Edmonton, Alberta

Nymphs of the house cricket (*Acheta domesticus*) were reared from early first instar to adult in isolation or in groups of three, in one pint Mason jars, at 30°C. Nymphs reared in groups matured significantly faster than those reared singly, ($P<0.01$). Females from both treatments were moved on the second day of adult life to clean jars, containing an adult male and a one ounce cream pot full of moist sand, suitable for oviposition, as well as food and water. All females were held under these conditions, at 30°C, until five days after they began to lay eggs, when they were killed.

The mean preovipositional period of grouped females was 4.80 ± 0.83 days, that of isolated females 5.59 ± 1.39. The difference was significant ($P<0.5$). Over five days, grouped females produced a mean of 117.2 ± 71.6 eggs which hatched, while isolated nymphs produced 146.2 ±

61.8. When chorionated eggs remaining in the ovarioles were included, the mean for grouped females was 205.7 ± 76.0 and that for isolated ones was 237.2 ± 89.2. These differences were not significant, but support the hypothesis that, as in *Locusta migratoria* Forsk. (Acrididae), females respond to grouping by beginning to lay eggs earlier, but tend to produce fewer eggs altogether.

Three of the isolated females were found, when dissected, to have large pink thoracid muscles. This contrasted with the small white muscles found in all the other females. These three females were among the last to emerge as adults in the whole sample. They produced fewer than average eggs. They may represent an alternative response to isolation in which the capacity for migration is retained longer than usual.

THOSE GAY BLADES: A SOMEWHAT PORONOGRAPHIC VIEW OF INTRA- AND INTERSPECIFIC HOMOSEXUALITY IN MALE SIMULIIDS (DIPTERA: NEMATOCERA)

D.A. Craig
University of Alberta
Edmonton, Alberta

Male adults of *Simulium vittatum* were observed swarming over the Sturgeon River. Male and female adults copulating were collected off the water surface. However, of 80 pairs collected, 10% were both males. The male fly being used as a "female" was always teneral and possessed white leg patches like the mature female. It is suggested that the white leg patches of the female adult *S. vittatum* are part of the visual cues involved in mating.

SKOTOTACTIC RESPONSES OF WATER-STRIDING BEETLES (COLEOPTERA: CARABIDAE)

W.G. Evans
University of Alberta
Edmonton, Alberta

Semi-aquatic carabid beetles swim on the surface if they accidentally fell into the water or are put there purposely. This swimming response is probably a simple reflex mediated by a loss of contact of the tarsi with the substrate much like the tarsal reflex of flying insects. Orientation when swimming consists of a directed response towards the nearest silhouette (skototaxix). Swimming to the nearest object on the shore is an adaptation that helps these beetles to escape from unfavorable situations such as vulnerability to predation. Leg movements during swimming are unlike those of the aquatic Coleoptera and Hemiptera.

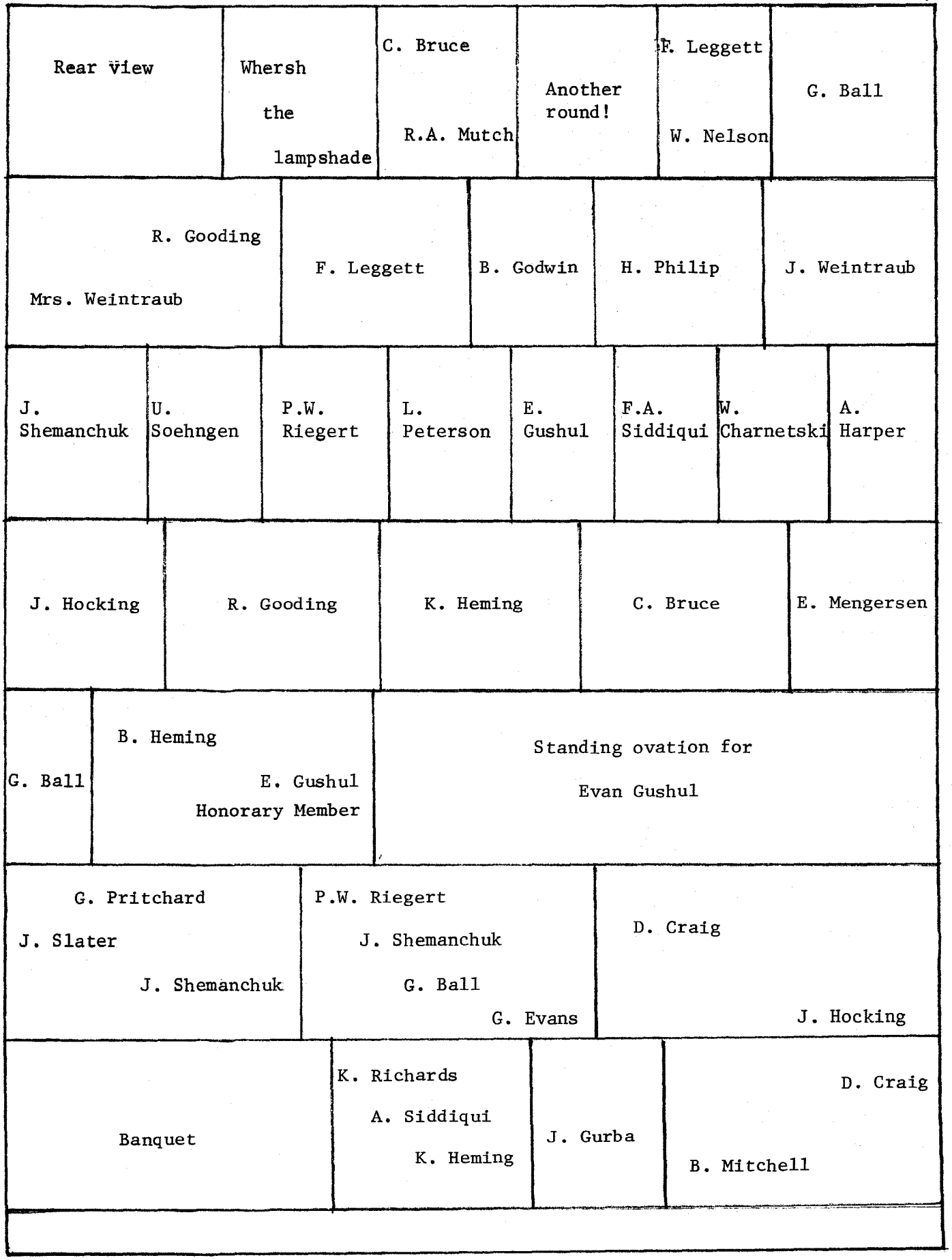
CHEMICAL CONTROL OF A WILLOW SHOOT-BORING SAWFLY, *EUURA ATRA* (JURINE) IN ALBERTA, 1977

J.A. Drouin and D. Kusch
Northern Forest Research Centre
Edmonton, Alberta

Whips in willow cutting beds were seriously damaged by a willow shoot-boring sawfly in a tree nursery. The life history, damage, and hosts of *Euura atra* (Jurine) are presented. Field trials with chemical soil drenches having a systemic action were tested in 1975, 1976 and completed in 1977. Plots, techniques, and method of treatment were outlined and discussed. Good results were obtained with dimethoate, diazinon, propoxur and oxydemeton-methyl. For best results, irrigation is essential for soil drenches.

Numero uno	Residence	Frank Grisdale Hall	W. Nelson J. Gurba
J. Gurba M. Dolinski & shadow J. Shemanchuk	R. Gooding J. Hocking	Kay George Ball	Good food
P.W. Riegert	B. Heming	H. Cerezke	R.A. Mutch
G. Pritchard	J. Slater	K. Richards G. Evans	G. Ball	W. Nelson	W. Stumpf
J. Houseman	D. Watler	G. Evans	A willow shoot-boring sawfly	J. Drouin
Photo salon	Egad! they've escaped!!	There! got that one!	Those gay blades	Sasquatch
Insect collections	Butterflies	Amphitheater Duncan Marshall Place	B. Heming H. Cerezke

TWENTY-FIFTH ANNUAL MEETING - OLDS - 1977


Rear view
Whersh the lampshade
C. Bruce
R.A. Mutch
Another round!
F. Leggett
W. Nelson
G. Ball
R. Gooding
Mrs. Weintraub
F. Leggett
B. Godwin
H. Philip
J. Weintraub
J. Shemanchuk
U. Soehngen
P.W. Riegert
L. Peterson
E. Gushul
F.A. Siddiqui
W. Charnetski
A. Harper
J. Hocking
R. Gooding
K. Heming
C. Bruce
E. Mengersen
G. Ball
B. Heming
E. Gushul
Honorary Member
Standing ovation for
Evan Gushul
G. Pritchard
J. Slater
J. Shemanchuk
P.W. Riegert
J. Shemanchuk
G. Ball
G. Evans
D. Craig
J. Hocking
Banquet
K. Richards
A. Siddiqui
K. Heming
J. Gurba
D. Craig
B. Mitchell

ENTOMOLOGICAL SOCIETY OF ALBERTA

MINUTES OF EXECUTIVE MEETING

May 20, 1977 - 1:30 P.M.

An executive meeting of the Entomological Society of Alberta was held May 20, 1977, in Room 263 Agriculture-Forestry Building, University of Alberta, Edmonton. Present were H.F. Cerezke, W.A. Charnetski, K.R. Depner, J.A. Drouin, R. Gooding, B. Heming, W.A. Nelson and J. Weintraub.

1. Minutes of previous meetings: Two errors were pointed out in the 1976 Minutes which the Secreatry noted would be changed in the 1976 Proceedings. B. Charnetski moved the adoption of the Minutes, seconded by B. Nelson, Carried.

2. Interim Treasurers Report: H. Cerezke reported a current bank balance of $1217.32 and $18.79 cash on hand, making a total of $1236.11 funds in the Ent. Soc. Alta. treasury. The remainder of the loan to the Department of Entomology, University of Alberta, for sale of Insect Collection Boxes is $672.15. One bill yet to be paid includes the cost of printing and duplicating the 1976 Proceedings.

3. Membership: H. Cerezke noted there were presently 96 regular and student members and two honorary members in ESA.

4. Correspondence: The Secretary reported on correspondence received since the last meeting. Two items were discussed for action. The first was a request by the ESC for more Student Encouragement activity. One suggestion raised was that ESA might consider putting together some type of "kit" to encourage student projects. Another suggestion was that ESA prepare some sort of inventory list to describe all areas of student encouragement or related activities which are undertaken to promote entomological interests and understanding. It was suggested this inventory be broadened to include all forms of public-relations acitivities undertaken by all members both within and outside the Society. B. Heming volunteered to write to entomologists and establishments in Alberta for a listing of the different kinds of "p-r" work being done.

   The second item discussed was in reference to the request from the ESC that Affiliate Societies change the term of office of Regional Directors to a three-year term, and that the term of office be made to coincide with the dates of the annual ESC meetings (e.g. between Sept. 15 and Oct. 31). According to the Constitution ESA now has a 2-year appointment of R.D., so that a 3-year term would require amendment with approval through a membership vote. R. Gooding moved we consider amending the Constitution for 3-year term and that the term of office be tied into the date of the annual meetings of ESC. B. Nelson seconded. Carried. The matter was left in the hands of the President and Secretary to draft out the Constitutional change and to circulate to all ESA members for a vote at the 1977 annual meeting. The clause that the Regional Director shall be "immediately re-eligiable for one more term" was to be deleted.

5. Honorary Membership in ESC: B. Charnetski reported that Dr. G. Hobb's name and documentation had been submitted to ESC for consideration as an honorary member. Since the death of Dr. Hobbs another submission from Alberta is being prepared. B. Charnetski reported he had a list of names on a contingency list from Alberta in preparation for future submissions to ESC.

6. Honorary Membership in ESA: B. Charnetski reported he now has two names selected to be submitted as honorary members in ESA at the 1977 annual meeting. B. Nelson, J. Weintraub and B. Charnetski agreed to prepare the necessary documentation for the two selected names.

7. Local Awards Committee: B. Charnetski reported on the 1977 winners as follows:

Gold Medal:	Dr. A. Downes
C. Gordon Hewitt:	Dr. J.H. Borden

8. Regional Director's Report: B. Charnetski briefly reviewed the business that had transpired since the fall 1976 meeting. The ESC Scholarship Fund will be reported on at the annual ESA meeting.

9. Annual Meeting of ESA, 25th in 1977: The location of this meeting is to be at the Olds Agricultural College. The theme for this 25th year is "Recognition of Amateur Entomologists in Alberta". The dates have not been fixed but will be set in consultation with personnel at the College. They are, in order of first, second, and third choice, respectively: Sept. 29-Oct. 1: Oct 6-8; Oct. 13-15. The date may depend upon the availability of residence accommodation at the College. Other facilities were reviewed as outlined earlier by Mr. B. Godwin.

Committees established for the 25th annual meeting are as follows:

Program:	B. Mitchell (Chairman)
	R. Gooding
Local arrangements:	B. Godwin (Chairman)
	J. Houseman
Notices:	W.G. Evans (Chairman)
	W. Stumpf

B. Heming will notify the above persons of their selection for committees and confirm their acceptance of committee responsibilities.

10. Insect Collection Competition: The Secretary was instructed to contact H. Philip re this ESA function to advise that notices of the Competition be dispersed through the Department of Education as in past years.

11. ESA Scholarship Fund: R. Gooding noted the U of A faculty had increased their portion of the Scholarship Fund to $60.00, and that they will ask ESA at the 1977 annual meeting for a matching contribution of $60.00, to take effect in 1978.

12. Proposed Joint ESA-ESS Meeting in 1978: A joint annual meeting with the Saskatchewan Entomological Society was discussed for 1978 at Lethbridge. B. Heming will send out letters of invitation and explore the feasibility of such a joint meeting.

13. Entomological Manpower in Canada: As a follow-up to this report as published in the September, 1976 issue of the ESC Bulletin, the Secretary was requested to write Dr. G.H. Gerber for sufficient copies to be given out to all interested ESA members during registration at the annual meeting.

The meeting adjourned at 5:30 p.m. on a motion by B. Charnetski, seconded by J. Drouin.

H.F. Cerezke
Secretary-Treasurer

MINUTES OF EXECUTIVE MEETING

October 6, 1977 - 7:00 P.M.

A meeting of the ESA Executive was held October 6, 1977 at Olds College. Present were B.S. Heming, R.H. Gooding, W.A. Nelson, J. Weintraub, J.A. Drouin and H.F. Cerezke.

1. The minutes of the previous Executive meeting held May 20, 1977 were adopted on a motion by R. Gooding, seconded by J. Drouin.

2. H. Cerezke presented an interim financial report, stating there was a total balance of Society funds of $1,119.44 as of September 13, 1977.

3. H. Cerezke reported on ESA membership, indicating there were currently 73 paid members for 1977, 20 1976-paid members and two Honorary members (Jacobson and White) giving a total of 95 members.

4. The secretary reviewed the pertinent correspondence received since the last Executive meeting and pertain to topics discussed below.

5. Student Encouragement: (a) As a follow-up to this item discussed at the May 20 Executive meeting, B. Heming circulated a questionaire to the membership to survey the kinds of public relations contributed by society members. He reviewed the results he obtained from the survey and was asked to prepare a summary for the 1977 Proceedings.
(b) The secretary was asked to contact ESC to verify with their records our standing of an advance loan of $900.00 arranged some years back for promotion of student encouragement such as the purchase of insect collection boxes.
(c) Student Scholarship Fund: Mr. J. Shemanchuk was asked to briefly summarize the activities of the ESC Scholarship Committee of which he is Chairman. He reported the Scholarship Fund had grown to over $6,000.00 and that the interest on this amount would provide the annual scholarship. This topic was to be discussed further at the general business meeting.

6. Regional Director's expenses: There was general agreement among the Executive that the room and board expenses of the Regional Director incurred while in attendance at ESC Board of Governor's meetings be paid by ESA funds, and that transportation expenses be paid by ESC.

7. Local Awards Committee: Mr. Felix Sperling, a student at the University of Alberta was announced as the 1976-77 recipient of the ESA Prize in entomology.

8. ESA Honorary Membership: It was noted there were two vacancies to be filled in the society for Honorary membership. However, J. Weintraub presented a written documentation on the impressive contributions and achievements of Mr. E. Gushul in support of his nomination to Honorary member. The Executive unaminously agreed to this selection and noted that Mr. Gushul's selection was especially timely to celebrate the 25th Anniversary of the Society as a tribute to Amateur Entomologists. It was requested the documentation be read during the first part of the general business meeting and a ballot be taken by the membership during the second part.

9. Regional Director's report: Although B. Charnetski was not present a copy of his report on 1977 activities was presented to the secretary. B. Heming noted he would ask G. Ball to report on the Biological Survey of Canada at the general business meeting.

10. B. Heming announced that a letter of invitation had been sent to Dr. D. Paschken, Secretary of the Entomological Society of Saskatchewan, for a joint ESA-ESS meeting in Lethbridge in 1978. Confirmation had not yet been received.

11. The secretary suggested J. Shemanchuk be asked to report on his participation as a member of the Public Advisory Committee for the Environmental Conservation Authority.

12. No report was given on the Biting Fly Centre, however, a report may be available for the final business meeting.

13. Expenses of Feature Speaker: B. Nelson moved that the entire expenses of Dr. P.W. Riegert be paid by ESA. J. Weintraub seconded. Carried.

14. Insect Collection Competition: No report.

15. The meeting was adjourned on a motion by J. Drouin.

H. Cerezke
Secretary-Treasurer

MINUTES OF THE 25TH ANNUAL MEETING OF THE E.S.A.

October 6-8, 1977

The 25th Annual Meeting of the Entomological Society of Alberta was held at Olds College, Olds Alberta, October 6-8, 1977.

1. Adoption of minutes in the 1976 Proceedings: Moved by D. Craig, seconded by B. Nelson that the minutes be adopted as printed in the 1976 Proceedings. Carried.

2. Interim Treasurer's Report: H. Cerezke reported a bank balance as of September 13, 1977, of $1096.56 plus $22.88 cash on hand, giving a total balance of $1119.44. H. Philip moved, R. Gooding seconded approval of this report. Carried.

3. Membership Report: H. Cerezke reported there were 73 1977-paid members, 20 1976-paid members and two honorary members (L.A. Jacobson and R.M. White) for a total of 95 members in E.S.A. Adoption of the report was moved by A. Harper, seconded by D. Craig. Carried.

4. Correspondence:

   (a) Letter from Albert MacPhee, Chairman, Heritage Committee, Entomological Society of Canada, requesting historical information on ESA for the National Archives.

   (b) Letter from K.H. Wilson, Oklahoma, U.S.A., who kindly submitted a progress report on the ENTAUT (Directory of Entomologists) Project.

   (c) Letter from W.G. Wellington, President, ESC, expressing thanks for an invitation to attend the 1977 Annual Meeting.

5. Honorary Membership in ESA: Prior to the meeting, a summary statement of the achievements and long-time contributions made to the Society by Mr. E. Gushul was prepared by the Lethbridge staff, in preparation for nominating Mr. Gushul to honorary member. B. Heming read the statement and informed the membership that a vote by secret ballot would be made during the second part of the business meeting.

6. Student Encouragement: B. Heming reported on the results of his public-relations survey made earlier in the year by circulation of a questionnaire. From a total of 90 forms distributed, 23 completed forms were returned. A copy of the report will be printed in the Proceedings and a copy is to be forwarded to E.S.C. B. Heming requested that any members who had not completed the form to still do so in order that results could be incorporated into a revised report.

R. Gooding noted that at the recent E.S.C. meeting in Winnipeg the U. of M. graduate students had organized field trips and short talks for pre-school to old age groups as learning experiences in entomology. The report was given high praise. B. Heming asked if there was more work we as entomologists should be doing in p-r. G. Ball pointed out, however, that Heming's report indicated our public interface was already substantial. In reference to the $100.00 grant contributed to the affiliate societies by E.S.C., the question was raised as to the current status of a $900.00 loan E.S.A. obtained a few years ago as a lump sum in lieu of annual grants. H. Cerezke was instructed to send a letter of enquiry to the E.S.C. Treasurer and Secretary to bring this matter up to date.

7. Student Scholarship Fund: J. Shemanchuk reported as Chairman of this committee, indicating his committee was solely devoted to the raising of money and not awarding scholarships. Over $6000.00 had been raised so far which has been invested to earn over $600.00/yr. This amount will be given out annually, starting in 1978 as Student Scholarship. His committee will give a greater push for more donations but suggested these not be requested from industry. Some suggestions were made for increasing the contributions (tax deductable) from E.S.A., E.S.C. members but voluntary donations were considered best approach. J. Gurba moved, A. Harper seconded that E.S.A. make a $100.00 donation. Carried.

   G. Ball suggested a committee be formed to look into the matter of raising E.S.A. dues by $1.00 which could be given as a contribution. The matter was left for the next executive to establish a committee.

8. E.S.A. Student Prize: G. Ball announced that F. Sperling, a student at U. of A. was the only recipient this year for the prize. A certificate will be prepared by Cerezke along with a cover letter from B. Heming which will be presented to Mr. Sperling. R. Gooding moved that E.S.A. contribution to the Student Prize be increased to $60.00. However, the motion was defeated.

9. Contribution to Zoological Record: It was moved by G. Ball, seconded by A. Harper that E.S.A. contribute $25.00. Carried. D. Craig requested an enquiry be made as to when the next issue on entomology can be expected. The enquiry was left in the hands of B. Heming.

10. Change in E.S.A. Constitution: An amendment prepared prior to the Annual Meeting and circulated to the membership was reviewed for vote. The amendment concerned changing the appointment of Regional Director to E.S.C. from a two-year term to a three-year term, and that the term of office commence at the end of the Annual General Meeting of E.S.C., rather than on January 1.

    The members were asked to vote on the following "extraordinaty resolution" to amend as follows:

"The Regional Director for Alberta of the Entomological Society of Canada shall be elected at the annual meeting of the Entomological Society of Alberta and shall be a member of the Executive of the Alberta Society. The term of office shall be for three years and the starting date shall be at the end of the Annual General Meeting of the Entomological Society of Canada."

H. Wong moved acceptance of the motion, G. Ball seconded. Carried. (Motion was accepted by more than three-quarters majority.)

11. Presentation of Honorary Member in E.S.A.: The membership voted unanimously in accepting Mr. E.T. Gushul as honorary member in the Society. The Society now has three honorary members.

12. Report on the Insect Collection Competition: H. Philip presented his report as Chairman of this Competition and indicated he would pass his report to the Editor for including in the Proceedings.

13. Common Names Committee: G. Ball indicated there was no report.

14. Environment Conservation Authority Report: J. Shemanchuk, as E.S.A. representative on the Pollution Study Group, presented a brief report. He attended all scheduled meetings in 1977, including one meeting with the Environment Protection Study Group which reviewed and reported on the Biocides hearings. In the Pollution Study Group, disposal of wastes were discussed, two reports and two resolutions were prepared. The present topic being dealt with concerns the use of sewage affluent for crops. A literature search will be made and the public health hazards will be analyzed. J. Shemanchuk also noted the E.C.A. was being reorganized.

15. Biting Fly Institute: No report was given, but it was noted that a meeting on the subject was currently being held in Winnipeg.

16. Survey of Entomology in Alberta: B. Heming reviewed the background to this topic as dealt with in 1976 and was asked to read out some of the replies received from provincial ministers. With regard to employment opportunities for entomologists in the province it was noted that four C.D.A. positions in Lethbridge would be filled. Employment Committee of E.S.C. would like all entomology job openings advertised; however; Agriculture Canada apparently does not advertise job positions. The question was raised as to how U. of A. graduates in entomology fared with job seeking. Most appeared to be able to get jobs.

17. Biological Survey of Canada: G. Ball reported on this topic and indicated that the Scientific Committee of the Biological Survey of Canada had held two meetings. He noted the Survey members would be publishing a list of entomologists as the first publication, and a list of collections to be published in the Bulletin. A third publication is to be a

base-line study covering off the physical and climatic features of Canada. He pointed out that the present role of the Biological Survey was to provide coordination of those working on similar interests but in different areas, and to facilitate their exchange of ideas, insect material, etc. The original Biological Survey was established as an 18-month pilot study, due to end in June, 1978, with a final report for review due by April 1980. An attempt will be made through the Scientific Committee to seek interim financing to sustain the Survey for the 21 months after June, 1978.

At the local level (re Survey of Insects of Alberta), no further action has occurred from that reported in 1975 and 1976. G. Ball noted that the Canadian Museum Association held a meeting in Calgary, and that a report, which concerned the Insect Survey proposal, was sent to the Hon. H. Schmid and a reply had been received. However, as G. Ball pointed out, without an invertebrate specialist at the Provincial Museum to look after invertebrate collections, the Survey of insect fauna in Alberta could not proceed. The Alberta Society of Professional Biologists is also interested in having the Provincial Museum made available as a permanent depository of any insect collections made by consultants in Alberta.

18. Report of the Nominations Committee: Mr. J. Weintraub reported the following slate of Executive members to serve the Society functions during 1978.

President	- J. Weintraub
Past-President	- B. Heming
Vice-President	- H.R. Wong
Secretary-Treasurer	- D.A. Craig
Editor	- H.G. Philip
Regional Director to E.S.C.	- J.A. Shemanchuk (1977-1980)
Directors (Edmonton)	- M.G. Dolinski (1978-1980)
(Calgary)	- P. Scholefield (1977-1979)
(Lethbridge)	- K.R. Depner (1976-1978)

J. Weintraub moved acceptance of this slate of Executive, G. Ball seconded. Carried.

19. Regional Director's Report: B. Charnetski presented his final report after serving as R.D. to E.S.C. for four years. A copy of his report will be printed in the 1977 Proceedings.

20. Report of Resolutions Committee: J. Shemanchuk presented this report as follows:

Whereas the success of the 25th Annual Meeting of the E.S.A. was, to a large extent, attributed to the follwoing, be it resolved that letters of appreciation be sent to:

(a) Mr. W.J. Collin, Principal, Olds College for the very fine facilities provided for our meeting.

(b) Dr. P.W. Riegert for his interesting and informative talk on the history of Entomology in Western Canada.

(c) Mr. J.B. Gurba for his interesting after-dinner talk and slide presentation.

(d) The staff of the Horticultural Department of Olds College for the corsages and bouquet of flowers which added greatly to the celebration of our 25th Anniversary as a society.
H. Shemanchuk moved adoption of this report, seconded by A. Harper. Carried.

The meeting was moved adjourned by B. Charnetski, seconded by J. Weintraub.

H.F. Cerezke
Secretary-Treasurer

FINANCIAL STATEMENT FOR 1977

Receipts		Subtotals	Totals
Bank balance held in Edmonton Account January 1, 1977 (includes $5.72 held for F.W. Faxon)		$1162.33	
Petty cash, January 1, 1977		15.79	
		1178.12	$1178.12
Membership sales:	(1975) 1 @ $2.00	2.00	
	(1976) 1 @ $4.00	4.00	
	(1977) 30 @ $4.00	120.00	
	(1978) 49 @ $4.00	196.00	
		322.00	322.00
Bank Interest:	April 30	15.40	
	October 31	15.18	
		30.58	30.58
Annual Meeting: Registration	43 @ $7.50/person	322.50	322.50
Reimbursement of loan, U of A Ent. Dept:	Mar 18	162.50	
	Nov 15	214.50	
		377.00	377.00
Sale of 1976 ESA Proc. to Colorado Library, purchased by F.W. Faxon funds ($4.00 U.S.) Nov. 1, 1977		4.43	4.43
Total Receipts for 1977			2234.63
Credit held for F.W. Faxon			5.72
Total Ent. Soc. Alta. Receipts			2228.91

Disbursements		
Entomological Society Alta. Prize, Univ. of Alberta		$ 50.00
Printing and duplicating 1976 ESA Proceedings		162.76
Donation to ESC Student Scholarship Fund		100.00
Annual Meeting:		
Reinbursement for purchase of wine	18.00	
Guest speaker (travel, food, lodging)	177.00	
ESA banquet catering	262.50	
	457.50	457.50
Insect Collection Competition Prizes		60.00
CNCP Telecommunications (re death of Dr. Hobbs)		36.91
Postage and miscellaneous (envelopes, receipt book)		33.79
Total Disbursements		900.96

Balance Summary	Subtotals	Totals
Total Receipts	$2234.63	
Total Disbursements	900.96	
Bank balance December 31, 1977	1333.67	
Credit held for F.W. Faxon	5.72	
Total Ent. Soc. Alta. funds held in bank	1327.95	
Petty cash on hand December 31, 1977	25.76	
Total Ent. Soc. Alta. funds in Treasury December 31, 1977		$1353.71

Summary of Insect Collection Funds (loan) to Univ. of Alberta, Entomology Dept.

Total loan (1976) to Ent. Dept. for Insect collection boxes			958.15	958.15
Reimbursement to ESA for sale of boxes @ $3.25/box:	October 12, 1976	(38 boxes)	123.50	
	March 18, 1977	(50 boxes)	162.50	
	November 15, 1977	(66 boxes)	214.50	
			500.50	500.50
Value of loan outstanding held by Ent. Dept, December 31, 1977				457.65

Prepared by:

H.F. Cerezke
Secretary-Treasurer

Approved by ESA Auditors

J.A. Muldrew

J.A. Drouin

REPORT OF THE REGIONAL DIRECTOR

As Regional Director, I attended Entomological Society of Canada Governing Board meetings at three locations since our last meeting: Toronto, October 23, 24, and 27, 1976; Quebec City, February 24 and 25, 1977; and Winnipeg, August 20, 21, and 23, 1977. Actions taken by the Board at these meetings have, or will be, published in the following bulletins of the Society: Volume 8(4), December 1976; Volume 9(2); June 1977; and Volume 9(4), December 1977.

General Society Business

A definite need for an additional executive officer (to be known as Second Vice-President) has been demonstrated and ESC members are being asked to approve an amendment of the bylaws to accommodate this position. In addition, the revised bylaws have been approved, the standing rules have been brought up-to-date, and Committee guidelines have been assembled.

Dr. F.L. McEwen, University of Guelph, has been elected President elect.

The Board has indefinitely shelved the idea of purchasing a new headquarters building.

Future ESC Meetings

The following schedule has been drawn up:

1978 - Independent ESC meeting, University of Ottawa, August 20-24.

1979 - Entomological Society of British Columbia and ESC.

1982 - Possible combined ESC and ES America in Toronto.

Medals and Awards

The year's Gold Medal was awarded to Dr. John Anthony Downes of the Biosystematics Institute in Ottawa. The C. Gordon Hewitt award was presented to Dr. John Harvey Borden of the Pestology Centre of Simon Frazer University. The 1977 Post Graduate Scholarship was awarded to Mr. Béla Nagy of the University of Western Ontario.

Membership Fees

The ESC membership fees have been increased to $25.00; however, the finance committee is looking into a split fee structure similar to the Entomological Society of America.

Sustaining membership fees have been decreased from $250.00 to $100.00 in an attempt to attract more members.

Scholarship Fund

The Scholarship Fund now exceeds $6,000.00 thanks to the able efforts of its chairman, Joe Shemanchuk.

Biological Survey of Canada

The Pilot Study for a Biological Survey of the Insects of Canada has been funded until June 1978. However, funding is being solicited to bridge the period until a contract for a complete Biological Survey can be obtained.

Dr. C.E. Ball is chairman of the Scientific Committee of the survey.

Publications

NRC again turned down the ESC bid to obtain support for page charges for University personnel publishing in the Canadian Entomologist.

Because of increased printing costs and no apparent way of reducing printing costs, the Board found it necessary to increase page charges in the Canadian Entomologist to $59.00 per page. The Society is actively looking for a new Canadian Entomologist editor to replace Dr. P. Morrison who retires from that position this year.

Manpower Study

I have tapes of the addresses given in Toronto regarding the Manpower Survey. These are available to anyone and you are encouraged to listen to them.

Research Funding

A study is presently underway to investigate the funding of entomological research at universities.

Public Education Committee

This committee has proposed many very ambitious ideas, including the creation and support of a national publication; most of their ideas were supported by the Board in principle at least. Members are encouraged to read their report in the December bulletin.

Photo Salon

Considerations are being given to have the ESC Salon sponsored jointly with the Manitoba Camera Club and the Photographic Society of America (PSA) Nature Division. It is hoped this will increase the number and quality of the submissions.

In closing, I would like to thank the members of this Society (Entomological Society of Alberta) for providing me with the opportunity to serve as your Regional Director. I have endeavoured to fulfill my duties and to communicate the views of our Society to the ESC and, conversely, the views of the ESC to our Society. Where possible, I have conveyed the views of our Alberta Society and not those of my own.

Once again, thank you for your support and your considerations.

W.A. Charnetski
Regional Director

REPORT OF THE INSECT COLLECTION COMMITTEE

A total of 21 collections were submitted for the competition this year, which is one of the highest totals in the 23 years this annual competition has been held. All entries were in the open competition except for a single entry in the senior competition, which was also the only collection submitted from outside the Olds College.

Many collections from the Olds students were not completed due to lack of time, however, for those that had been completed, the quality was very good and judging the competition took much longer than usual. Mr. Buck Godwin is again to be congratulated for his excellent work in teaching the Olds students the interesting world of insects which is reflected in the fine collections they make.

Results of the 1977 competition are as follows:

Open Competition

First prize - Pam Wagers, O.A.V.C.

Second prize - Diane Rowswell, O.A.V.C.

Third prize - B.D. Colclough, O.A.V.C.

Highly commended: Jane Kalmakav, O.A.V.C.
W.D. Walker, O.A.V.C.

Senior Competition

Highly commended: All Siemans, Lethbridge

I wish to thank Dr. H.R. Wong, Ms. Marilyn Steiner, and Mr. G. Hilchie for ably assisting with the judging of this year's competition.

H.G. Philip
Chairman

INSECT COLLECTION COMPETITION

History of Awards
*Entomological Society of Alberta Prize Winners

1954

First Prize, Senior - Norman Rollingson, 3309 Parkside Drive, Lethbridge.
Second Prize, Senior - Ronald Law, 1631 - 21 Avenue N.W., Calgary.
Third Prize, Senior - Fred Vincent, 2340 - 24 Avenue N.W., Calgary.
First Prize, Junior - Donna Mae Nattrass, Manyberries.
Second Prize, Junior - Wayne Nattrass, Manyberries.
Third Prize, Junior - Cam Huth, 2719 - 18 Street N.W., Calgary.

1955

First Prize, Senior - Donna Mae Nattrasss, Manyberries.
Second Prize, Senior - Joy Molyneux, 1124 - 9 Street E., Calgary.
Third Prize, Senior - Hilary Anderberg, 927 - 7 Avenue W., Calgary.
First Prize, Junior - Wayne Nattrass, Manyberries.
Second Prize, Junior - Kenneth Beswick, Spring Coulee.
Third Prize, Junior - Clinton Walker, 11224 - 87 Avenue, Edmonton.

1956

First Prize, Senior - Doug Salt, c/o Dr. R.W. Salt, Research Station, Canada Agriculture, Lethbridge.
Second Prize, Senior - Ron Popik, Glen Park, Calmar.
First Prize, Junior - Kenneth Beswick, Spring Coulee.
Second Prize, Junior - Brian Martin, 9107 - 117 Street, Edmonton.

1957

First Prize, Senior - Kenneth Beswick, Spring Coulee.
Second Prize, Senior - Doug Salt, c/o Research Station, Canada Agriculture, Lethbridge.
Third Prize, Senior - Jane Moonen, Millet.
First Prize, Junior - Christine Marshall, Howsann School, RCAF Station, Claresholm.
Second Prize, Junior - Bruce Martin, 9107 - 117 Street, Edmonton.
Third Prize, Junior - Gary Brown, 42 Cambridge Road, Calgary.

1958

First Prize, Senior - Andrew and Myron Baziuk, Redwater.
Second Prize, Senior - David Larson, 1201 - 24 Street St., Lethbridge.*
Third Prize, Senior - Keith and Neil Redding, 648 - 14 Street S., Lethbridge.
Consolation, Senior - Jack Haberman, 3115 - 10 Avenue A S., Lethbridge.
First Prize, Junior - Joe Shorthouse, 2317 - 13 Avenue S., Lethbridge.*

1959

First Prize, Senior - David J. Larson, 1201 - 24 Street S., Lethbridge.*
Second Prize, Senior - Jack Haberman, 3115 - 10 Avenue A S., Lethbridge.
Third Prize, Senior - Joseph Shorthouse, 2317 - 13 Avenue S., Lethbridge.*
No Junior Prizes were awarded this year.

1960

First Prize, Senior - David J. Larson, 1201 - 24 Street S., Lethbridge.*
Second Prize, Senior - Joseph Shorthouse, 2317 - 13 Avenue S., Lethbridge.*
Third Prize, Senior - Kenneth Richards, 2209 - 10 Avenue S., Lethbridge.
Honorable Mention, Senior - M.S. Carleton, Banff.
Consolation, Junior - Lacombe School, Grade 8.

1961

First Prize Senior - Joseph Shorthouse, 2317 - 13 Avenue S., Lethbridge.*
Second Prize, Senior - Kenneth Richards, 2209 - 10 Avenue S., Lethbridge.
Third Prize, Senior - M.S. Carleton, Lethbridge.
Challenge Competition - David J. Larson, 1201 - 24 Street S., Lethbridge.*
No Junior Prizes were awarded this year.

1962

General Collection, First Prize (one entry) - Kenneth Richards, 2209 - 10 Avenue S., Lethbridge.
Challenge Competition (two entries) - Draw with two winners, David Larson and Joseph Shorthouse (both of Lethbridge).*

1963

First Prize, Junior - Robert Iverson.
Second Prize, Junior - Gordon Bridgewater.
Third Prize, Junior - John Kloppenborg.
First Prize, Challenge Event - Joe Shorthouse.*
Second Prize, Challenge Event - Ken Richards.
No Senior Prizes were awarded this year.

1964

First Prize, Senior - Robert Iverson, Edmonton.
First Prize, Junior - Beverly Ann Lambert, Edmonton.
No other prizes were awarded.

1965

No prizes awarded.

1966

First Prize, Senior - Norman Wood, 9135 - 142 Street, Edmonton.
Second Prize, Senior - Alan Matheson, Box 695, Olds.
First Prize, Junior - Selma Scott, 140 Lamone Street, Calgary.
Second Prize, Junior (Draw) - Hugh Godwin, Olds, and Cecelia Williams, Taber.
C. Open - Gwen M. Walker, O.A.V.C., Olds.

1967

First Prize, Senior - Donald Wayne Chomym, Box 977, Leduc.
First Prize, Junior - Selma Scott, 140 Lamone Street, Calgary.
Second Prize, Junior - Hugh Godwin, Box 760, Olds.
Third Prize, Junior - John Acorn, 14416 - 78 Avenue, Edmonton.
First Prize, Open - Sharon Erickson, O.A.V.C., Olds.
Second Prize, Open - Ross Hyatt, Box 128, Bowden.
Third Prize, Open - Joseph Hartwell, Box 125, Olds.
Honorable Mention (Open) - Norman Tensen, O.A.V.C., Olds, Alan and John Mathieson, Box 695, Olds.

1968

First Prize, Senior - Mr. N.G. Sperling, Olds Agricultural and Vocational College, Olds.
Second Prize, Senior - Mr. A. Bouvier, Olds Agricultural and Vocational College, Olds.
Third Prize, Senior - Mr. E. Leitert, Olds Agricultural and Vocational College, Olds.
Honorable Mention - Mr. D. Kroeker, Olds Agricultural and Vocational College, Olds.
First Prize, Junior - Mr. M. Pawluk, 7932 - 97 Avenue, Edmonton.

1969

First Prize, Senior - Richard Krahn, Olds Agricultural and Vocational College, Olds.
Second Prize, Senior - Herman Barthel, Olds Agricultural and Vocational College, Olds.

Third Prize, Senior - Wendy Groenveld, Olds Agricultural and Vocational College, Olds.
Honorable Mention - Cheryl Williams, Olds Agricultural and Vocational College, Olds.
First Prize, Junior - Hugh Godwin, Olds.

1970 (9 entries total)

First equal, adult - Mike Herrington, Olds Agricultural and Vocational College, Olds.
First equal, adult - Donna Knott, Olds Agricultural and Vocational College, Olds.
Third, adult - Trevor Gould, Olds Agricultural and Vocational College, Olds.
First Prize, Senior - Jim Malyk, Airdrie.
Second Prize, Senior - Mark Pawluk, Edmonton.
Best Collection, Junior - Hugh Godwin, Olds Agricultural and Vocational College, Olds.

1971

First Prize, Senior - E.E. Robertson. O.A.V.C., Olds.
Second Prize, Senior - A. Holland, O.A.V.C., Olds.
Third Prize, Senior - J.H. Acorn, Edmonton.
Honorable Mention, Senior - T. Pike, Calgary.
First Prize, Junior - K. Godwin, Olds.
Third Prize, Open - The Pruden family, Calgary.

1972 (15 entries total)

First Prize, Open & Senior - John Acorn, Edmonton.
Second Prize, Open & Senior - Katie Shaw, Edmonton.
Third Prize, Open & Senior - Bob Davidson, Edmonton.
First Prize, Junior - Leisa Murdoch, Crossfield.
Second Prize, Junior - Hugh Godwin, Olds.

1973 (6 entries total)

General Collection
First Prize, Senior - John Acorn, Edmonton.
Second Prize, Senior - Hugh Godwin, O.A.V.C., Olds.

Special Collection
First Prize, Senior - Katie Shaw, Edmonton.
First Prize, Junior - Mike Chrustawka, Edmonton.
Second Prize, Junior - Leisa Murdoch, Crossfield.
Third Prize, Junior - Zenon Trylowsky, Calgary.

1974 (3 entries total)

No Senior Competition entries.
First Prize, Junior - Billy Charnetski, Jr., Lethbridge.
Second Prize, Junior - Brian Osberg, Lethbridge.
Third Prize, Junior - Leisa Murdoch, Crossfield

1975 (11 entries total)

No Senior Competition entries.
First Prize, Junior - Brian Osberg, Lethbridge.
First Prize, Open - Elizabeth Russell, O.A.V.C., Olds.
Second Prize, Open - Marjorie Marshall, O.A.V.C., Olds.
Third Prize, Open - Russel Lemieux, O.A.V.C., Olds.
Highly Commended, Open - Jim Howard, Olds.

1976 (12 entries total)

First Prize, Junior - Tom Boag, Edmonton.
First Prize, Senior - Allan Siemens, Lethbridge.
First Prize, Open - Bob Prysiazny, O.A.V.C., Olds.
Second Prize, Open - Clive Cox, O.A.V.C., Olds.
Third Prize, Open - Randy Dunn, O.A.V.C., Olds.

1977 (21 entries total)

First Prize, Open - Pam Wagers, O.A.V.C., Olds.
Second Prize, Open - Diane Rowswell, O.A.V.C., Olds.
Third Prize, Open - B.D. Colclough, O.A.V.C., Olds
Highly Commended, Open - Jane Kalmakav, O.A.V.C., Olds.
W.D. Walker, O.A.V.C., Olds.
Highly Commended, Senior - Al Seimans, Lethbridge.
No Junior Competition entries.

POTPOURRI

The following items were received by the Secretary during 1977 and are available on file for anyone wishing to see them:

1. Quarterly Notices of New Publications (Sept. 1976, Dec. 1976, March 1977, June 1977) Fisheries and Environment Canada.

2. Sample copy of the magazine "The Beaver, Magazine of the North", Winter 1976.

3. Notes for speeches by Joe Clark, M.P. (Aug. 19, 1977; Sept. 15, Sept. 23, Sept. 24, 1977).

4. Background information on the environmental assessment of Alaska Highway Pipeline Proposal, Fisheries and Environment Canada.

5. Notice of Canadian Wildlife Federation Annual Convention, May 26-28, 1977.

6. Copies of the Newsletter, "Energy Conservation News".

7. Copy of Nature Canada Bookshop 1976-77 Catalogue.

8. Report on news from the Office of Energy Conservation, Canada Department of Energy Mines and Resources.

9. Copies of "Citizens Bulletin", Canada Department of Fisheries and Environment.

10. Copy of first issue of "Environmental Protection Bulletin", September 1977, Fisheries and Environment Canada.

11. Notice of new book soon to be released by Statistics Canada under the title "Human Activity and the Environment".

12. Copies of Energy, Mines and Resources, Canada "News Release".

13. Copy of "The Wildlife Protector", Vol. 1, No. 2, Summer-Fall, 1977, published by Intl. Wildlife Protection Assn.

14. Copy of "Excise News", and Excise Technical Information Section publication, published by Revenue Canada, Customs and Excise.

15. Copy of "The Pager", Olds College newspaper.

16. Copy of "The Conserver", newsletter distributed by the Office of Energy Conservation, Department of Energy, Mines and Resources, Ottawa.

17. Information on Jack Miner, the Canadian Naturalist and The Jack Miner Migratory Bird Foundation Inc.

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PUBLIC RELATIONS ACTIVITIES - ENTOMOLOGICAL SOCIETY OF ALBERTA MEMBERS

In response to a request from the Entomological Society of Canada, for more student encouragement activity on the part of local entomological societies, your executive felt that a first step would be to find out what the public relations activities of our membership are at present. B. Heming mailed out a questionnaire on July 18, 1977 requesting from all members a brief summary of their activities in the following areas in the last 5 years:

1. Extension
2. Popular Talks
3. Popular Articles
4. Insect Identification
5. Consulting
6. Teaching
7. Applied Research

Results of returns were as follows:

Total sent: 80

Total returned: 24 (30%)

	No. Returned	No. In Each Class	% Return
Federal Government	10	25	40
Provincial Government	5	13	38
Colleges and Universities	6	12	50
Students	1	17	6
Other	2	12	17

1. Extension Activities: - (14)

Federal	6	- telephone queries
Provincial	5	- short talks to commodity groups, clubs etc.
Colleges	2	- pest management displays at field days and fairs
Students	1	
Other	0	- news media releases
		- damage surveys
		- control recommendations

2. Popular Talks: - (27)

Federal	5	- talks to high and elementary school children
Provincial	4	- popular media presentations
Colleges	5	- talks to natural history clubs etc.
Students	1	
Other	2	

3. Popular Articles: (16)

Federal	7	- extension leaflets
Provincial	4	- popular articles in non-scientific press
Colleges	3	- newsletters
Students	1	- booklets
Other	1	- films

4. Insect Identification: - (15)

Federal	6	- government personnel identified members of pest species
Provincial	3	
Colleges	4	- college personnel, students and others identified insects in their specialty areas
Students	1	
Other	1	

5. Consulting for Pay: - (1)

Federal	0	- most government personnel consult constantly as part of their jobs
Provincial	0	
Colleges	1	- one college professor consulted with municipal police on murder and suicide cases - time of death
Other	0	

6. Teaching: - (16)

Federal	5	- government personnel mainly short courses or a few lectures at colleges and universities.
Provincial	5	
Colleges	6	
Students	0	- college personnel - college and university courses
Other	0	

7. Applied Research: - (15)

Federal	10	- research of government personnel mostly applied
Provincial	4	
Colleges	0	- environmental protection research
Students	0	
Other	1	

Almost all provincial and federal entomologists in the province have broad contact with the public and contribute in most areas listed above. The vast majority of those who replied have voluntarily given talks to school classes and clubs of various kinds. The % interaction with the public is probably lower in the case of the 60% who did not reply.