

# Entomological Society of Saskatchewan Inc.

## NEWSLETTER

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It appears that 1987 will be a good year for entomology in Saskatchewan. The E.S.S. is off to a good start with the addition of 9 new members. We welcome Micheal Bidochka, Jo Anne Buth, William Chapco, Micheal Cheeseman, Roger Ducharme, Bill Kalyn, Tanya Pankiw, Paul Thiel and Ross Weiss to the society. A number of activities are also in the works for this coming year, such as the Grasslands Park project headed by Peter Mason, a butterfly census headed by Ken Pivnick and various public insect displays to be initiated by the Amateur and Student Encouragement Committee of E.S.S. These activities should certainly help make people more aware of the E.S.S. in this province.

It is also time to introduce the executive for 1987. Ken Pivnick is our new president, Keith Moore is vice president, Bruce Neill remains as secretary/treasurer, Paul Riegert as Regional Director and Rosemarie DeClerck as newsletter editor, and the new auditors are Larry Burgess, Carl Lynn, Chris Hinks and Martin Erlandson.

### 1. A word from the president

In November 1985, I arrived in Saskatchewan to take a job with the National Research Council (studying plant-insect chemically-mediated interactions). At that time, I had just completed my Ph.D. at Laval University in Quebec City, where I studied foraging, thermoregulation and reproductive strategies of the European skipper *Thymelicus lineola*. Since beginning work for the federal government, I have been exposed to more and more discussion of the relative importance of applied versus basic research, and whether research funding in different sectors should be decreased or increased. This is not unique to the Canadian government, but has recently been an important subject of debate in most developed countries. I believe that my experience as a graduate student illustrates some aspects of this debate as it applies to entomology.

I studied the European skipper in the Matapedia valley of the Gaspé peninsula: rolling hills, sparsely populated and composed of a mosaic of poplar-spruce forests and small dairy farms. It was also a logical choice for a study site as the population density of this insect was very high. Actually, in the first summer of the study I saw a number of timothy fields totally defoliated and not worth the trouble to harvest. *T. lineola* is not native to Quebec, and in 1972 high population densities were recorded for the first time near Montreal as this imported insect expanded its range. There was obviously at that time a lot of concern among farmers, especially timothy-seed producers (some of whom discontinued seed production because of this insect). As a result, Jeremy McNeil of Laval University, later my thesis supervisor, was successful in obtaining a grant to study this pest. In conjunction with various researchers, the possibilities of biological, microbial and chemical control agents in the management of *T. lineola* populations were investigated. In fact, the problem more or less solved itself, as a nuclear polyhedrosis virus reached epidemic proportions in Quebec skipper populations in the late 70's. The populations, while still large, have caused no serious damage since then. Based on the skipper's pest potential, it was still possible for Jeremy to obtain funding for me to work on this insect.

The initial goal of my study, which began as a Master's, was to determine how a farmer's choice of forage crops, date of cutting, and crop rotation affected skipper densities. The project eventually evolved into a study of adult behaviour which, if it had any application to control of this former pest, was only useful in the long term. My view is admittedly biased, but I believe that the results of my study are useful in increasing our understanding of one of the key factors regulating population densities in many butterfly species (weather), how butterflies choose flower species on which to feed and how flexible that choice is, and finally in understanding the ecological significance (probably critical under some conditions) of trace elements; the latter resulting in a commonly observed but very poorly understood butterfly behaviour, "puddling". If European skipper populations reach epidemic proportions again this information may be specifically very useful in helping to control them.

If many people in this country were starving or living in squalor, it would be unwise for our government to spend large sums of money on research programs, such as the one outlined above, which do not immediately affect the living standards of Canadians. At present, such is not the case in Canada. On the other hand, money is becoming tighter, and regardless of what politicians and economists say about upturns, downturns, aboutfaces and other economic gymnastics, this situation, in my opinion, will not change in the foreseeable future. Most of Canada's quick buck-making industries, such as mining, energy and forestry have already sold those raw materials which are easy to obtain. (Witness the debate in B.C. over the fate of the last of the province's virgin timber, or Quebec's Baie-James mega-project). Canada will also face increasing costs to pay for past excesses; a massive scale of tree-planting, cleaning of the Great Lakes-St. Lawrence River system, disposal of nuclear wastes, and paying off the federal deficit to name but a few.

As a result, those of us engaged in research will have to compete more intensely for limited funds. There is nothing wrong with that. With less funds available, we can and should waste less and spend our research efforts on projects that

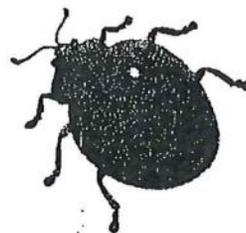
value. In order to maintain funding for biological research, given the current economic climate, we must strive to demonstrate the inherent value of our research. This means informing the public as to what we are doing and ensuring that what we are doing is good science. We should carefully consider why we are working on a particular problem and then ask ourselves whether we would feel happy about paying someone else (through taxes) to do the same work. Furthermore, and I think this is critical, if we see possible applications of our research, we should make a priority of getting that information to where, and in the form in which it can be applied. Entomologists give a lot of lip service to the practical importance of our work, but we do a lot of "buck-passing" in terms of who should be responsible for making use of that work.

Good basic research is justifiable on the basis that it makes a significant contribution to scientific knowledge, and has potential applications, both positive and negative. Conversely, applied research that is poorly done, that is not original, or whose products are unnecessary or damaging to health or environment, can not be justified. Scientists are doing their colleagues a disservice when they justify research funding on the basis of a catch-word (e.g. biotechnology) or a current problem (e.g. grasshoppers) if the research plan is not original, has no clearly defined goal, or is unviable. A common example of a gratuitous justification for studying insects is "the burgeoning world population which places an increasing strain on our ability to provide food for everyone in the future". Since insects destroy a large portion of food produced, especially in the tropics, insect research and particularly insect pest management is important. The main reason for human starvation has to do with the way wealth is distributed within and between countries, and has little if anything to do with our ability to produce food or protect it from insects. Even in poor countries, an improvement in

insect pest management will often mean only that the rich will get richer and the poor will see more food get shipped off to North America, Europe and Japan. I feel that this kind of justification is often made without thought and undermines the credibility of entomologists in general.

It is, however, important to study insects. This group of organisms makes up probably around 90% of all species on the planet today. Anyone interested in living organisms, or in maintaining life on this planet, should be interested in insects. We can learn an incredible amount about evolution, genetics, speciation, animal behaviour, animal learning and ecological concepts, among other things. Beneficial uses of insects for mankind will undoubtedly increase as a food source, raw materials for a variety of products, and as an indicator of environmental problems. The role of insects in human disease is not likely to diminish and destruction resulting from insect pest introduction into new habitats will accelerate as human mobility increases. Also, as insecticide costs and cancer deaths (the latter due in part to pesticide exposure) continue to escalate there will be more and more room for new imaginative ways for controlling insects. The cost of insect damage and control to Saskatchewan farmers amounted to between 75 and 300 million dollars for each of the last three summers (figures estimated from annual reports provided by J.L. Harris, Agriculture Saskatchewan). In 1978, Hugh Danks estimated (in "Canada and its insect fauna") that close to half of the insect species in Canada were undescribed. Since that time, the estimate has not changed substantially. There is definitely a lot of important work for entomologists to do. We will have to be careful, judicious, reasoned and enthusiastic to earn the financial support that we need, which is probably a lot more than we have received in recent years in this province.

- Ken Pivnick



## 2. Slide library project

Lloyd Harris submitted the following notice.

Have you ever had to give a presentation to farmers, students or gardeners and had to describe an insect to them without being able to show it to them? If you have then you know the kind of problems encountered. For example, you are trying to describe the larva of a tussock moth but the fellow in the front row thinks you are describing something the size and shape of a rattlesnake, the lady in the middle of the audience has pictured it as being like a pin cushion and the fellow at the back of the room..... well he was so bored that he decided to have a nap shortly after the lights went out.

If this is happening to you or if you just want to "spruce up" your presentation with some attractive photographs of insects, your society has something for you. - Last summer we started a collection of photographic slides depicting the life cycle and damage of some of the insects that are found in the prairies. Currently there are about 130 slides in our inventory, but we hope to have another 100 or 150 slides added to the collection by spring. Copies of these slides will be made available to society members at a cost of \$2.50 or to non-members for \$3.50/slide.

If you are interested in obtaining a listing of the slides that are already cataloged or if you have some really good photographs you would like to donate to the library, contact:

J.L. Harris  
2839 Lakeview Ave.  
REGINA, Sask.  
S4S 1G6  
(306) 787-4669

Bruce Neill  
Box 484  
INDIAN HEAD, Sask.  
S0G 2K0  
(306) 695-2284

### 3. Butterfly count

Anyone interested in participating in a North America-wide butterfly count in June or July? The count is organized by the Xerces Society, a non-profit organization dedicated to the conservation of rare and endangered invertebrates and their habitats. It is named after the extinct Xerces blue butterfly Glaucopteryx xerces (Boisduval). The count is organized along the same lines as the better-known bird count, but the date on which this count is carried out in any locality is more flexible: June 14 to July 27. The general idea is to promote interest in butterflies in particular and invertebrates in general, to increase awareness of habitat destruction, alteration or improvement and its effects on local fauna, to gain valuable information on the population density and range of North American butterflies, and to have fun. Anyone interested can obtain more information by contacting Ken Pivnick (National Research Council, Saskatoon, S7N 0W9; Telephone 975-5272 (office) or 652-5240 (home).

### 4. Report of new insect records for Saskatchewan

#### COLEOPTERA

Dytiscidae (both species identified by Dr. David Larson)

Hydroporus solitarius (Sharp) - 7 specimens were collected near Hunt Falls on the 2nd and 3rd of July, 1986 by Keith Roney and Ronald Hooper, in the sandy bay of the lake above the falls. This is the farthest west this species has been reported. It was collected previously west to Mile 214 on the Hudson Bay Railway in Manitoba.

Acilius abbreviatus Mann - 1 specimen was collected by Ronald Hooper on June 12, 1984 at Roche Percee Campsite. This western species was formerly found as far east as southwestern Alberta and Central South Dakota.

#### CERAMBYCIDAE

Typocerus octonotatus (Hald.) - 1 specimen was collected by Keith Roney in the Rosefield Badlands southeast of Val Marie on June 30, 1983, and identified by J. McNamara. It was previously collected as far north as North Dakota. Its larvae feed on the roots of grasses, and is considered a pest in Kansas and Oklahoma.

#### LEPIDOPTERA

Pyralidae (identified by A. Mutuura)

Mimoschinia rufofascialis (Steph.) - 4 specimens were collected on the 12th and 13th of June, 1985 at Val Marie and Rosefield by Keith Roney and Ronald Hooper. 3 were found at an ultra-violet light, and one was a dayflyer visiting flowers. It was previously collected as far east as Medicine Hat, Alberta, and the new Saskatchewan record means this is our first species of Odontinae. The larvae feed on mallow.

Hypopygia costalis (F.) (Clover hayworm) - 2 specimens were collected by Ronald Hooper at sugar bait near Oxbow on August 7, 1984. It is not on the Alberta or Manitoba moth lists. This species is sometimes a pest in stored hay in eastern United States.

Salabriaria tenebrosella (Hulst.) - 1 specimen was collected near Tantallon by Ronald Hooper at an ultra-violet light on August 10, 1984. This eastern species is an oak feeder.

Nephoterix virgatella (Clem.) - 1 specimen was collected at an ultra-violet light by Keith Roney on June 14, 1984 near Tantallon. This may be the first record in the prairie provinces for this eastern species.

Peoria gemmatella (Hulst.) - 1 specimen was collected at Fort Qu'Appelle on July 27, 1978 by Ronald Hooper, and 1 specimen by Keith Roney at an ultra-violet light near Oxbow on August 7, 1984. In 1968, J. Schaffer reported a distribution of this species only north to Iowa.

Geometridae (identified by K. Bolte)

Lambdina fervidaris athasaria (Walker) (curve-lined looper moth) 1 specimen was collected by Ronald Hooper at an ultra-violet light near Tantallon on June 14, 1984. This oak feeder has previously been collected as far west as South Dakota.

Tacparia detersata (Gn.) - 1 specimen was collected by Ronald Hooper at an ultra-violet light near Tantallon on June 14, 1984. Formerly, it has been collected as far west as Winnipeg, Manitoba in Canada, but as far as the Pacific in the United States. Its food plant is alder.

Noctuidae (identification checked by E. Rockburne)

Hypeninae

Bomolocha deceptalis (Wik.) - (deceptive bomolocha) - 1 collected by Ronald Hooper on July 14, 1975 near Norquay. Formerly reported as far west as Winnipeg, Manitoba.

Plusiinae

Syngrapha borea (Auriv.) - 1 was collected at La Roche by Ronald Hooper on July 17, 1971. Formerly misidentified in the collection. This is a southern record for this arctic species.

Amphipyrrinae

Oligia tonsa (Grote) - A former report describing a species Oligia semicana, which was collected at Fort Qu'Appelle on July 24, 1986, was in error. It is a specimen of Oligia tonsa, which has formerly been collected in Saskatchewan at Loon Lake. The same error was made by New Brunswick entomologists.

Cucullinae

Copicucullia antipoda (Str.) - 1 was collected by Ronald Hooper on June 29, 1983 in the Val Marie badlands at an ultra-violet light and 1 near Rockglen on June 30, 1983. This species has been collected as far north as Fenticton, B.C., but it is not on the Alberta moth list.

Noctuidae

Abagrotis reedi (Buck.) - 1 specimen was collected in Moose Jaw on June 27, 1984 by Rudy Valerio. This is a fairly new species which was named in 1969.

Papilionidae

Battus philenor (L.) (Pipevine swallowtail) - We have recently found out about a Saskatchewan specimen of this species that is in the Canadian National Collection in Ottawa. It was collected in Val Marie by J.R. Vackerroth on June 9, 1955. The food plant does not occur here, so it is obviously a stray. There is also one record for Southern Manitoba. This brings the Saskatchewan butterfly list to 145 species.