The Entomological Society of Manitoba

Newsletter

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About the ESM Newsletter

The Entomological Society of Manitoba Newsletter is published three times per year. It is a forum whereby information can be disseminated to Society members. As such, all members are encouraged to contribute often. The Newsletter is interested in opinions, short articles, news of research projects, meeting announcements, workshops, courses and other events, requests for materials or information, news of personnel or visiting scientists, literature reviews or announcements and anything that may be of interest to ESM members.

Marjorie Smith, Editor[1]
Dept. of Entomology,
University of Manitoba
Winnipeg, Manitoba
R3T 2N2

[1]Ph. 204-233-5856
marj_smith@live.com

Co-Editor – vacant.
If you're interested in volunteering for the position, please let me know.

Editors' Comments

This first issue of Volume 40 of the ESM Newsletter has been a while in arriving, and I apologize for the delay. It co-ordinates the Newsletter with the ESM fiscal year, which begins on September 1st.

Inside you will find the tentative schedule of our **ESM Annual Scientific Meeting** and a call for papers. The meeting is being held at the **Freshwater Institute on Friday, November 1st**.
There is a **change of venue** for the symposium and business meeting, which will be held at the **Cereal Research Centre on Saturday, November 2nd**. Blue Bomber fans will know that on Saturday, November 2nd, there is a football game in the afternoon, so traffic to campus and parking will be tightly controlled. This will cause problems parking at the Department of Entomology, which is our usual venue for the Saturday meeting. Paul Fields has obtained permission for us to hold our Saturday meeting at the **Cereal Research Centre**, which has its own parking. Stay tuned for more on this in upcoming e-mails.

Marjorie Smith

From the President

As I write in mid-August, the night temperatures are already reaching single digits. By the time the Newsletter reaches you, summer will be past. I hope you had an interesting entomological spring and summer.

Since the last Newsletter, Volume 39, Issues 2&3, my main Society activity has been to coordinate the digitizing of back issues of the Proceedings and Manitoba Entomologist for the ESM website. The work is almost done, and I invite you to have a look at the remarkable history of Manitoba entomology summarized in these digital "pages". Volume 1, Number 1 of the Proceedings was published in December 1945 as 51 mimeographed pages, including minutes of the meetings that established our Society. This issue also included four review articles that covered a diverse series of entomological topics from insect cuticle, to statistics, to medical entomology and large scale DDT experiments. It seems that in those days ESM thought an important role for the Society was education of its members, access to the literature being so much more challenging then than now. As I went through the first decade or so of the Proceedings, I was impressed with the depth and breadth of the articles available. I certainly recommend having a look at the topics that interested our forbearers half a century or more ago.

The process of producing a digitized version of our past publications is easy in theory: scan the document, and then use optical character reading software to make the text searchable. In practice, the process was a little more challenging. We were dealing with 1000's of pages published in a variety of formats from faded mimeograph pages stapled together to tightly bound book-like formats. Furthermore, we had easy access to only one complete set of the publications stored in the Department of Entomology Library. We decided to try and scan the documents without damaging them, and without transporting them out of the building so that no issues went astray.

To make the process efficient and inexpensive, we decided to first photocopy each page, adjusting the contrast and size of the image to make the text as legible as possible. Michelle Wetton and Gwen Band spent many hours copying the documents. On behalf of ESM I want to thank them for their work, and particularly for providing such legible copies from a very diverse set of originals. Once the photocopies were in hand, I ran them through a high speed scanner at the Cereal Research Centre. The next step was to use optical character reading software and convert the images to searchable text. As each issue was completed, I sent the digital files to Rob Currie, Web Page coordinator, for uploading on the ESM website. Along the way, Rob had to negotiate an increase in the space available for our website. The process was completed in late

July. Now you can view all the Proceedings and Manitoba Entomologists. As it was completed, I tested each Volume to assure it could be searched for particular text. I hear that some members have already used the digital library to find articles by particular authors. Nevertheless, we need to do some additional testing to confirm that ESM entomological articles can be accessed by international search engines.

With summer nearing an end, it is time to start thinking about the autumn round of entomological meetings. First comes the Entomological Society of Canada meeting, October 20 – 23, in Guelph, Ontario. This meeting celebrates the 150th anniversary of the national society. Yes, our national society is older than the nation. The expanded program in honour of this occasion promises to be a diverse and interesting representation of entomology. I encourage as many of you as possible to attend. The next meeting is our own. ESM meets November 1 and 2 in Winnipeg. Paul Fields has put together a slightly unusual program, celebrating entomology at the Cereal Research Centre (CRC) of Agriculture and Agri-Food Canada (AAFC). As most of you know CRC closes in early 2014, after contributing to Stored Product and Field Crop Entomology in Manitoba for decades. One unique feature of this ESM meeting will be the invitation of retired entomologists from CRC to attend our meeting. Many of these entomologists contributed much to ESM over the years. The announcement of the meeting is in the current issue of this Newsletter. I hope many of you can attend, and look forward to an active autumn of entomology for all members of ESM.

Bob Lamb, President
Entomological Society of Manitoba

MEETING ANNOUNCEMENTS*

Joint Annual Meeting of the Entomological Societies of Canada and Ontario
Predating the Nation - A Sesquicentennial Celebration of Entomology in Canada
Guelph, Ontario, 20-23 October 2013

61st Annual Meeting of the Entomological Society of America
Entomology 2013: Science Impacting a Connected World
Austin, Texas, 10-13 November 2013
http://www.entsoc.org/entomology2013

North Central Branch of the Entomological Society of America
Des Moines Marriott, Des Moines, Iowa, March 9 – 12, 2014

XXV International Congress of Entomology
Entomology without Borders
Orlando, Florida, 25-30 September 2016

*If you have a meeting you would like listed in the next ESM Newsletter, contact Marj Smith with the details by 30 November 2013.

ESC TRANSITION COMMITTEE

Letter to the Regional Societies

The Entomological Society of Canada is currently transitioning to new federal legislation governing federal not-for-profit corporations. The new legislation requires that the ESC complete this transition by October 2014.

Operating under the new legislation shouldn't change much of the day-to-day operation of the ESC, and won't specifically impact regional societies except in regards to Regional Directors. At present, regional societies are responsible for selecting (or electing) Regional Directors—under the new legislation, ESC Directors can only be elected by members of the corporation itself, that is, by ESC members; either by all members or by a subsection of members if a special class of membership is established to enable this.

The ESC is attempting to provide a way of satisfying the new legislation while maintaining the spirit and intent of this position, permitting the regional societies to continue to nominate/elect the director of their choice. Our plan at this time is to take the names put forward by the regions and place these on a ballot for approval by the ESC membership at its annual meeting. We believe this should be legal under the new legislation, but we will communicate any new information regarding this as we continue the transition process.

Current plans are to continue the 3 year term for ESC Directors, on a rotating basis. Upon transition to the new Act, one-third of the Board will initially have to be elected for a 1 year term, one-third for a 2 year term, and one-third for a 3 year term in order to establish the rotation. This likely will have impact on the terms of some currently elected Regional Directors but the issue will be resolved in consultation with the regional Societies.

If you would like any more information regarding this transition or have questions about the process, please feel free to contact me (Kateryn.Rochon@umanitoba.ca).

Regards,

The ESC Transition Committee (Ad hoc)

69TH ANNUAL MEETING
ENTOMOLOGICAL SOCIETY OF MANITOBA
1-2 NOVEMBER, 2013

Tentative Program
Entomology at the Cereal Research Centre:
Past, Present and Future

Friday, 1 November, 2013
Freshwater Institute, 501 University Crescent, Winnipeg, MB

Introductory Speaker
Bob Lamb, Emeritus Research Scientist, AAFC Winnipeg
History of Entomology at the CRC

Keynote Speaker
Curt McCartney, Research Scientist, AAFC Winnipeg
Genomics of wheat midge resistance

Submitted papers and posters

Friday Night
Informal gathering at to be determined restaurant

Saturday Morning, 2 November, 2013
Change of venue to Cereal Research Centre on University of Manitoba campus

Symposium Speakers

Noel White, Research Scientist, AAFC Winnipeg, Manitoba
Pests of stored grain and food products: Detection and control.

Wayne (Xingwei) Hou, PMRA, Ottawa, Ontario
Pollinators and pesticides

Kevin Floate, Research Scientist, AAFC Lethbridge, Alberta
DNA barcoding of insects

Marjorie Smith, Emeritus Biologist, AAFC Winnipeg, Manitoba
Wheat midge in Western Canada: A multidisciplinary approach to pest management

Saturday Afternoon
ESM AGM
Possible tour of Dept. of Entomology collection for out of town guests, visit to Zoo

Saturday Evening
Mixer at Bob Lamb and Pat MacKay's, 291 Wildwood Park (Section I)

69th Annual Meeting of the Entomological Society of Manitoba
1-2 November, 2013

CALL FOR PAPERS
(Deadline for submissions: Friday, 4 October 2013)

Please complete and submit to: Paul Fields
Cereal Research Centre
Agriculture and Agri-Food Canada
195 Dafoe Rd.
Winnipeg, MB, Canada, R3T 2M9
204-983-1468
paul.fields@agr.gc.ca

SUBMITTED PAPER/POSTER FORM

1) The abstract title, IN CAPITAL LETTERS.
2) The name(s) of all authors and their addresses.
3) Abstract, comprised of no more than 250 words.
4) Type of Presentation: 15-minute oral presentation: [ ] or Poster: [ ]
5) Student Paper Competition: Yes: [ ] or No: [ ]

Submission of your abstract via email greatly facilitates construction of the program. Presentations will use PowerPoint. PowerPoint tips.
We intend to publish the abstracts in the Proceedings of the Entomological Society of Manitoba.

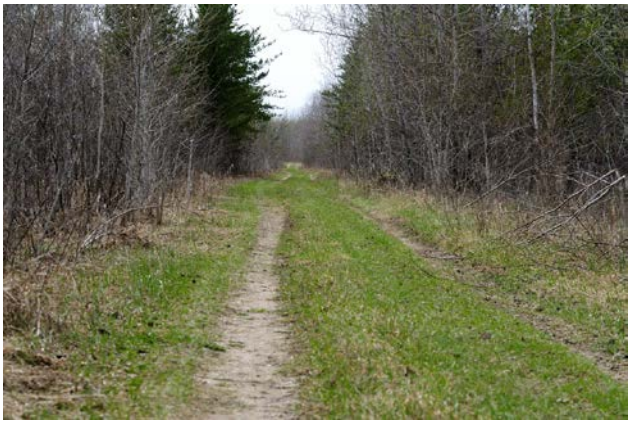
The following is an example of an abstract which is suitably prepared:

IMPLICATIONS OF INFESTATIONS OF A BRAZILIAN TOUCAN LOUSE AND ITS EFFECTS ON THE PRICE OF COFFEE. I.N. Sects, and I.O.U. Flees, Department of Incredible Infestations, University of Parasites, Winterpeg, Manitoba, R2I 1D2. sects@gmail.com
The effects of *Myrsidea hirsuta* (Carriker) (Phthiraptera: Menoponidae) infesting the black-mandibled toucan, *Ramphsatos ambiguous* Swainson in the rainforest of the Amazon jungle were found to have previously unknown consequences for world-wide coffee prices...

STRIKING OIL -- BEETLES, THAT IS

By Robert E. Wrigley and Jim Reimer

Early morning on May 16, 2013, the two of us headed east from Winnipeg along Highway 15, with the hope of collecting spring insects and spiders. In the past, this route reliably produced a nice variety of tiger beetles, wasps, bees, dragonflies, and aquatic insects. Our first stop was a sandy trail through Jack Pine-Balsam Poplar Forest north on Ducharme Road, a few kilometres west of Ste. Rita. Gravel pits in this area are usually filled with water and become favorite breeding sites for dragonflies and damselflies, but it was still to early (especially with this late spring) for the adults to be flying; however we observed numerous of their larvae squirming in our aquatic nets. We were surprised to see exceptionally low water levels, considering the great depth of snow a month earlier. Flying insects were strangely scarce for mid-May. Blue, bobbing pompilid wasps were the only common species, and we found a couple of spiders that had been stung and paralyzed by these spider wasps.

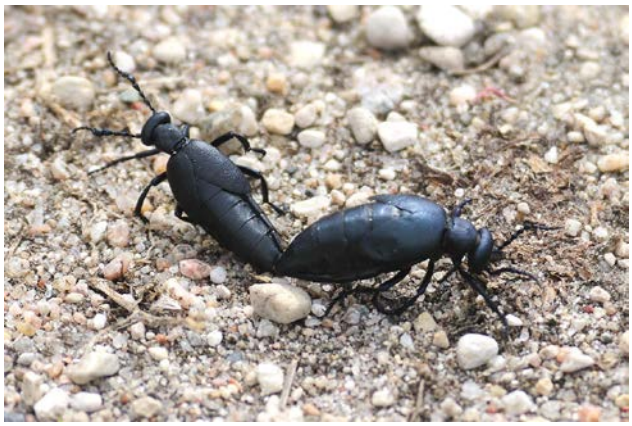


While Bob tried his luck sweeping an aquatic net through the foot depth of water in several ponds, Jim searched dry land. When Bob returned to the car, Jim handed him a jar with six bright-blue Oil or Blister Beetles (*Meloe angusticollis*). Bob had only collected a few of these big (15-26 mm) blue beetles in previous years, and so it was exciting to see so many at one time. Jim explained that they had all been found along the grassy edge of the sandy trail right beside the car. A search up and down the trail from this site, strangely, produced no other specimens, but another eight were located near the car over the next half hour. Since several of the specimens were mating, we assumed that their pheromones were attracting individuals to this particular site. We returned here later in the afternoon and picked up several more, and then a half kilometre farther down the trail, Jim hit another site where we counted over 60 more individuals, some mating and others climbing and chewing on the short grass. We were certain that several hundred specimens could have been observed, had we remained there for another hour or two.

Specimens in the collection jar produced copious “oil” or haemolymph, which stained the paper towel bright yellowy-orange. Since this reflex-bleeding from the legs contains a high concentration of the caustic blistering agent cantharidin, we were careful not to squeeze the specimens as we picked them up, and we repeatedly rubbed our fingers in the sand to remove any oil that might be present. Bob had experienced rather severe blistering on his fingertips a number of years ago from careless handling of other blister beetles -- an experience he did not wish to duplicate.

This bitter defensive agent in the chemical arsenal of the meloid family is no doubt a major reason these soft, plump, slow-moving beetles avoid being eaten by a host of predators, such as most birds and mammals, and ever-present ants and ground beetles found in the same habitats. However, frogs, spiders, and hedgehogs are able to overcome the toxic effects. Interestingly,

certain other insects, included in the families of fire-colored beetles, flies, wasps and true bugs, are attracted to cantharidin for re-use as chemical protection and in pheromones. The males of these insect groups apparently gather the substance from live and dead blister and false blister beetles (or other unknown sources) and offer it up to females during courtship. Entomologists take pleasure in creating complex names for body parts and phenomena, and so these insects are described as cantharidiphiles.

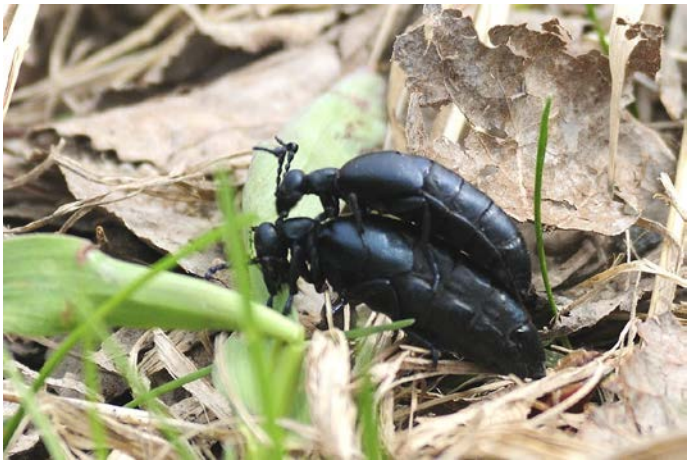


The use of the substance cantharidin has had a fascinating history, both in medicine as a supposed remedy and blistering agent, and in popular culture as an aphrodisiac (especially for men) since the Roman era. Consumption of "Musae Hispanicae" or "Spanish Fly" (dried and ground bodies of *Lytta versicatoria* and other species) irritate the human urogenital organs, resulting in strong penile erections, but this dangerous practice may lead to death with excessive ingestion (i.e., 30 mg), due mainly to kidney and reproductive organ failure. It is readily absorbed through the skin, mucous membranes, and gastrointestinal tract, and its toxicity has been rated similar to arsenic and strychnine.

Plenty of stories abound about the use of Spanish Fly. The Roman Empress Livia (58 BC to AD 29), wife of Augustus Caesar, added cantharidin to the meals of guests and members of the imperial family to stimulate them to commit sexual indiscretions for which they could be blackmailed at a later time. The Marquis de Sade fed it to prostitutes, and Henry IV was thought to be an enthusiastic user. During the Napoleonic War, a French physician was perplexed by a number of soldiers that had come to him complaining of painful erections lasting an excessively long time. Questioning the patients about their habits and recent diet finally exposed the fact that all these starving men had fed on frogs from the local ponds. The physician concluded that the frogs had accumulated cantharidin from feeding on *Lytta* blister beetles, and the soldiers were suffering the consequences (i.e., priapism). With a change in diet, the men soon recovered. Cantharidin, like many products in the past, was touted as a cure for numerous ailments and problems, ranging from leprosy infection to bed-wetting and hair restoration. Apparently it is still used to eliminate warts.

Bob had collected about 15 other species of blister beetles (mostly of the genera *Epicauta, Nemognatha, Pyrota* and *Cysteodemus*) in the United States. He had witnessed outbreaks in the millions (e.g., of the Striped Blister Beetle *Epicauta vittata* and other species) in alfalfa fields, but this was the first time he had observed such gatherings of a *Meloe* species. Bob was informed about a major swarm of Nuttall's Blister Beetle (*Lytta nuttalli*) in the mixed-grass prairie sandhills near Treherne in southern Manitoba several years ago. In this instance, many thousands appeared suddenly, fed on prairie plants for several days, and then rather suddenly vanished, having moved on to another area. This species sports beautiful wine-colored elytra and shiny green head and pronotum. The most common species is the 6-to-16-mm Black Blister Beetle, *Epicauta pennsylvanica*, often found feeding on legumes, asters, goldenrods, nightshades, and vegetable crops, and may become a serious agricultural pest when they reach

great numbers in fields. When trapped in hay, blister beetles sicken or even kill livestock from cantharidin poisoning. Depending on the concentration of cantharidin, as few as 25 beetles devoured in hay can kill a horse.



The family Meloidae contains 20 species (in 6 genera) in Manitoba, 48 in Canada, 300 in North America, and over 3000 (in 120 genera) worldwide. They come in a remarkable variety of colors and patterns, and so are popular among some collectors. Bob currently has 55 species in his collection. The group is unusual among the coleoptera in having soft and often-reduced elytra, leaving much of the swollen abdomen exposed. In fact they don't look like a 'regular' beetle at all. The antennae of many species have specialized middle antennomeres that apparently assist the male in locking onto the female's antennae during courtship. Our observed specimens were usually coupling with the male on top, but a few were facing in opposite directions, still locked together tightly. Courtship involves antennae pulling, head licking, and rubbing legs together, and male suitors are often kicked off abruptly during the female's selection process. The male concentrates cantharidin in accessory glands and offers it within a nutritious spermatophore as a treat to entice a female into copulation. This potent chemical is then incorporated into the female's body and then to her eggs, or is applied as a protective coating. This toxin is present in all 10 life stages of the beetle, but is particularly concentrated in the adult male's haemolymph and gonads.

After mating, the female lays from 50 to several hundred eggs in the soil, and may produce up to 3000 eggs during its life span of 20-50 days. The eggs hatch in about 12 days to become mobile larvae called triungulinids. In some species, these active predators feed on grasshopper and cricket eggs in the soil, and therefore are an important biological control agent. The larvae of other species climb up onto a flower and wait to attach onto a passing bee. These larvae are able to withstand starvation and desiccation for a long period while waiting for a transporter bee. Once carried to the underground bee nest, the larvae feed on bee eggs, nectar and pollen before entering immobile larval stages. After multiple molts and the pupal stage, the adults emerge in the spring, which explains our discovery along the trail in May. For so many reasons, oil or blister beetles are really fascinating insects.

References

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Evans, A.V. 2008. What's bugging you? A fond look at the animals we love to hate. Univ. Virginia Press, Charlottesville. 164 pp.

May, M. 2000. Blister beetle intoxication; cantharidin poisoning. chemweb.calpoly.edu/cbailey/377.

TIME NOW FOR THE VINYL CAFÉ STORY EXCHANGE…

Monarch Migration

by Bob Wrigley

Editor's Note: *Those of you who have listened to The Vinyl Café on Sunday at noon on CBC Radio will be familiar with the segment of the show called the Vinyl Café story exchange. This show, which is dedicated to stories and music, is recorded live from all regions of Canada. Listeners to the show are invited each week to send in their own stories. On each show, one of these is read, and as the host, Stuart McLean says, "They have to be true stories and they have to be short. After that it's up to you." The following story was submitted by Bob Wrigley.*

Being an avid amateur entomologist, I was excited when my wife returned home one afternoon with a pristine-looking, orange and black Monarch butterfly in an envelope. She had been rushing to a wedding reception, where her string quartet was to play, when she spotted the strikingly coloured insect lying on its side on the pavement. Realizing that I would want it for my collection, she quickly gathered up the delicate butterfly and slid it carefully into an envelope for safekeeping.

I noticed that the butterfly had a little tag on one wing. These tags are applied to live, released, butterflies in order to trace the species' remarkable migration routes. Every spring, several generations of Monarch make the 4800km journey northward from their hibernation sites in central Mexico to their breeding grounds in southern Canada.

I sent the tag data to Monarch Watch in Lawrence, Kansas and keenly awaited a reply, hopefully indicating when and where in Mexico or the southern United States this specimen had been tagged. Since there is such a low rate of recovery of tagged specimens, I believed that this Winnipeg record would be a highly valued report.

Well, months went by with no return letter, and just when I had given up on the matter, an envelope from Monarch Watch arrived in my mailbox. To say I was excited was an understatement. I ran to my wife to tell her the great news, and in seconds I had the open letter in my hands. After reading the first sentence of appreciation for my efforts, my enthusiasm plummeted when I read the news about my precious specimen. It had been released at the very wedding at which my wife was about to play. The poor creature had only sufficient energy to fly one block from the church, before it gave up the ghost.

I still keep the specimen in my collection as a reminder of the pitfalls of field research.

ESM EXECUTIVE 2012

POSITION	PERSON	EMAIL ADDRESS
President	Bob Lamb	Lambmack@mts.net
Past President	Lisa Capar	Lisa_capar@yahoo.ca
President-Elect	Robbin Lindsay	Robbin.lindsay@phac-aspc.gc.ca
Representative to ESC	Kateryn Rochon	kateryn.rochon@umanitoba.ca
Member-at-Large	Lara Toews	LaraMichelleBates@hotmail.com
Secretary	David Wade	dwade@winnipeg.ca
Treasurer	Ian Wise	iwise@agr.gc.ca
Proceedings Editor	Terry Galloway	terry_galloway@umanitoba.ca

ESM COMMITTEE CHAIRS 2012

Endowment Fund	Kathy Cano	Kcano@pcocanada.com
Finance	Kathy Cano	Kcano@pcocanada.com
Scientific Program	Paul Fields	Paul.fields@agr.gc.ca
Newsletter	Marjorie Smith Co-editor - vacant	marj_smith@live.com
Youth Encouragement	Matt Yunik	matt.yunik@gmail.com
Archives	Barb Sharanowski	barb.sharanowski@gmail.com
Common names	Barb Sharanowski	barb.sharanowski@gmail.com
Scholarships & Awards	Richard Westwood	r.westwood@uwinnipeg.ca
Fund-Raising	Joel Gosselin	jgosselin@viceroydistributors.ca
Nominating	Lisa Capar	Lisa_capar@yahoo.ca
Membership	Desiree Vanderwel	d.vanderwel@uwinnipeg.ca
Scrutineer	Colin Demianyk	cdemianyk@agr.gc.ca
Web Page	Rob Currie	Rob_Currie@umanitoba.ca
Social	Lisa Capar	Lisa_capar@yahoo.ca