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.

Kelsey Jones, Editor[1]
Kateryn Rochon Co-Editor[2]

[1]Stored Product Entomology
Agriculture and Agri-food Canada
Winnipeg, Manitoba
R3T 2N2

[2]Dept. of Entomology
University of Manitoba
Winnipeg, Manitoba
R3T 2N2

[1]Ph. 204-599-3921
kelsey.jones@agr.gc.ca

[2]Ph. 204-474-8640
kateryn.rochon@umanitoba.ca

Editors' Comment

Is anyone else thrilled the field season is finally here? For a while it felt like winter would never end!

The summer issue of the ESM *Newsletter* contains snippets of information about our upcoming meeting, an article on dung beetles, stories about collections and collecting, and a summary of some entomology outreach happening in the province.

And just a reminder, we would love to see contributions from new (and returning) authors for the Fall issue of the newsletter! Whether you hosted an insect-related event, have some hilarious field stories or just want to write about a cool insect, our membership would love to hear about it.

The good weather won't last for long, so get out there, soak up some sun and go find some cool six (or eight) legged friends!

Happy reading,

Kelsey Jones & Kateryn Rochon
ESM Newsletter Editors

President's Report
By Kateryn Rochon

Hello!

This one will be short and sweet, my friends! From the looks of it, I am not the only one spending a lot of time outside. It's been quite the season so far. The last time I wrote, we were all snowed under. The precipitations certainly have not slowed down, and all the excess moisture has significant impacts all over the province. All over Manitoba, seeding started late, grazing was delayed, and many areas are still underwater. But, on the other hand, what a time to be a mosquito: plenty of habitat for the young ones to develop, and the warmer days are just around the corner! I can tell you my students have been making good use of their mosquito jackets in the field. Protecting themselves from six-legged bloodsuckers while sampling for eight-legged ones - haha!

The Executive met in June. We have been working on solving some issues brought up by electronic voting for the last few years, and thanks to Past President Jeff Marcus, we will have a solution in place for the next election. We also received an update from Scientific Program Chairperson Sheila Wolfe about the planning for our 2022 Annual Meeting; see the save-the-date announcement in this newsletter. There is still uncertainty regarding the location of the meeting, but unless public health orders interfere with the plans, the 2022 meeting should be in person once again.

With that, enjoy the summer, take advantage of the sunny days to pursue your favourite entomological activity, and keep your bloodsucker repellent handy!

Kateryn

From the Regional Director
By Jason Gibbs, Regional Director to the ESC

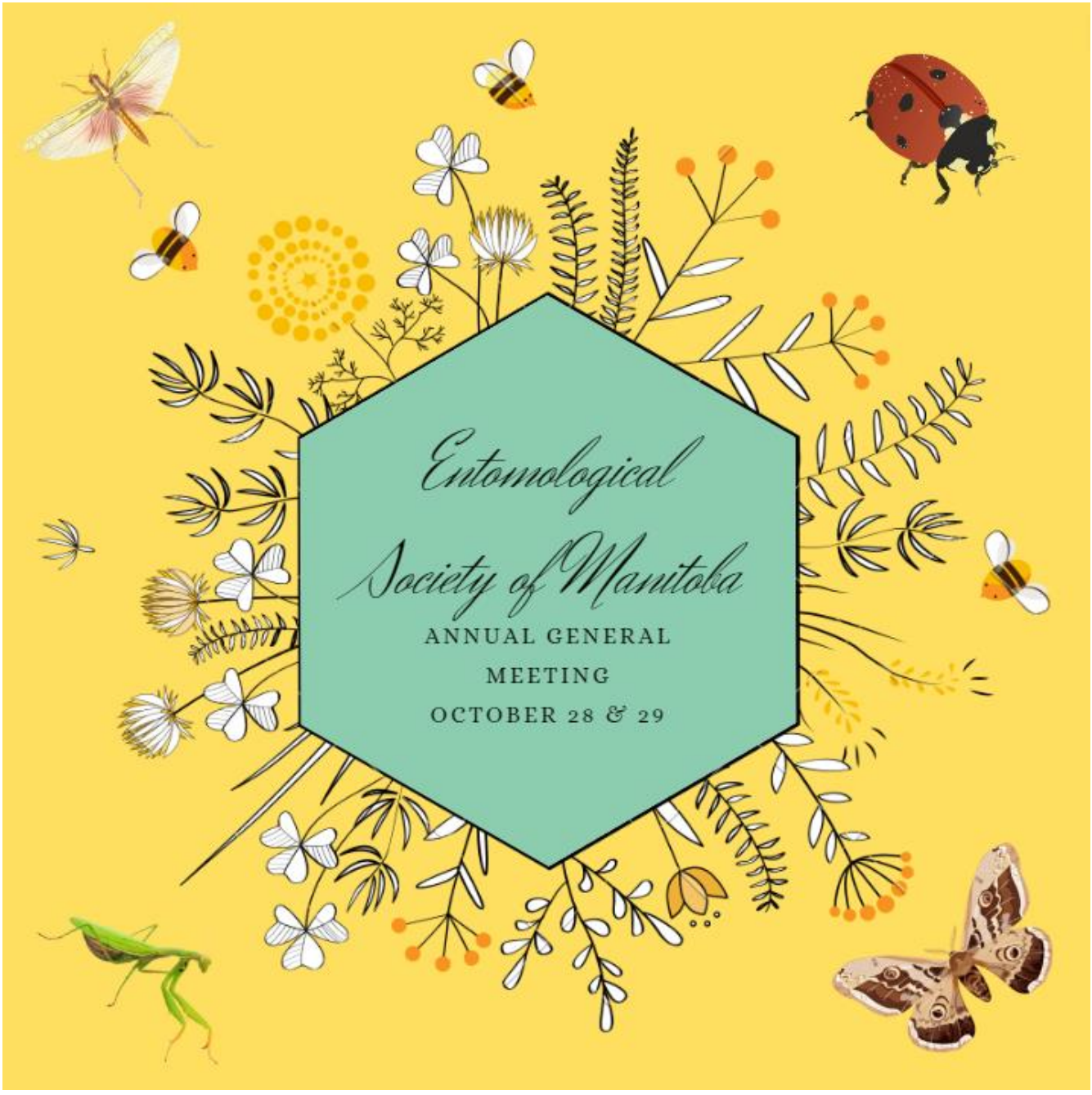
The next Joint Annual Meeting of the Entomological Societies of America, Canada, and British Columbia will be held on November 13-16, 2022 at the Vancouver Convention Centre. Registration is open (early bird rates available until Sep. 19). Submissions for online presentations are open until Aug. 31.

If you're not a member of the Entomological Society, then please consider joining for discounts to meetings and access to publications.

For existing members, *The Canadian Entomologist* moved to online-only. This means that tables of content for new issues are no longer being distributed by email. Individual submissions are published as they become available. The ESC is working with the publisher to find a way to advertise content more effectively.

Please consider publishing future works in *The Canadian Entomologist*. Members of the University of Manitoba and University of Winnipeg (and many other universities) are now eligible for free open access publication.

You're invited to the…



Incredible Creatures:
Dung Beetles: Mighty Manure Munchers
By John Gavloski

Wednesday June 8 was National Insect Appreciation Day. While the benefits and ecological roles of some insects like bees and dragonflies can be easier for many to appreciate, some insects have very important roles that often go unnoticed. Dung beetles are an example. Without them our natural and agricultural areas would be a lot messier, and biting flies that breed in manure would be more abundant. In this month's Incredible Creatures we will explore the fascinating world of dung beetles.

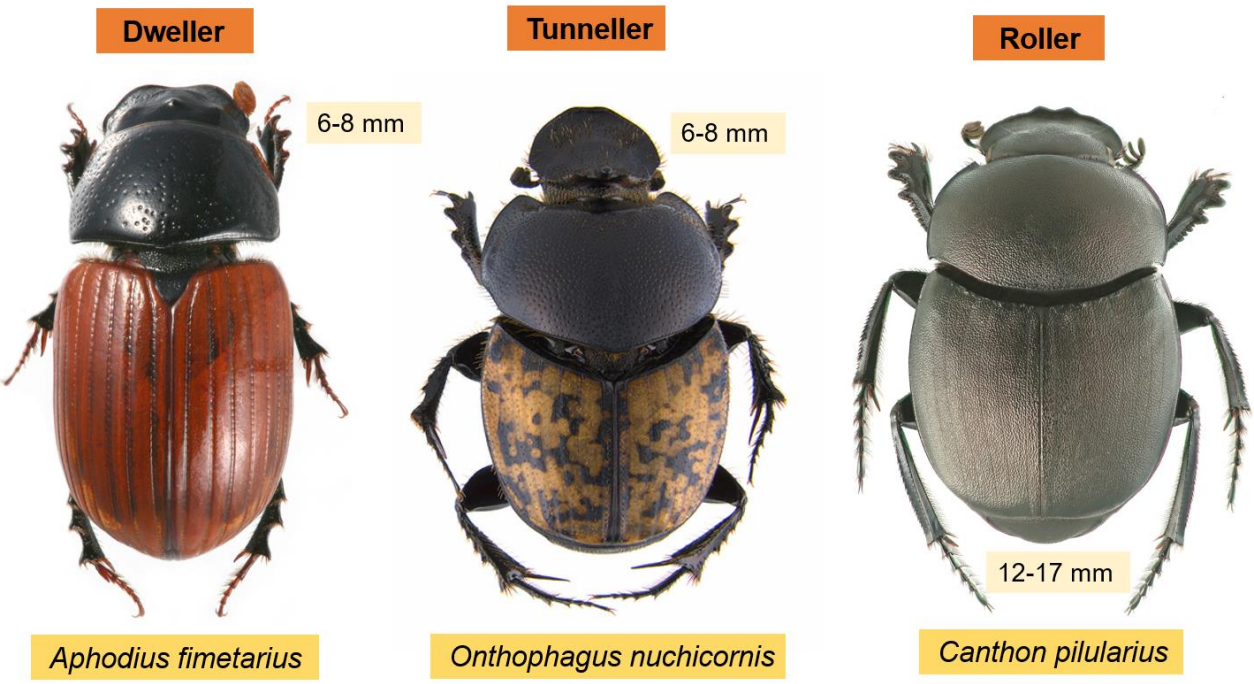


Photo credit: H. Goulet (retired), Agriculture and Agri-Food Canada, Ottawa, Ontario.

Dwellers, Tunnellers and Rollers

Dung beetles are beneficial insects in several ways. Dung beetles convert manure into nutrients, improving soil aeration, minimizing pest flies and increasing water infiltration. Studies have shown that greenhouse gas emissions from manure, such as methane, ammonia and carbon dioxide, are higher in dung pats when there is no insect activity.

There are three general categories of dung beetles; dwellers, tunnellers and rollers. Dwellers spend their entire life in dung, and they can break down a manure pat in a few weeks or months. The dwellers are part of a group of beetles called the small dung beetles (subfamily Aphodiinae). There are 20 species of dung beetles in Manitoba that are dwellers, and 38 species in Canada. They are rarely over 15 mm, and most are less than 8 mm.

Both "tunnellers" and "rollers" arrive to a fresh dung pat as adult beetles, ready to tear it apart. Tunnellers dig tunnels beneath the dung pat, and bury the dung at the end of the tunnels. They aerate

soil, and make soil more porous to water. In Canada, species of tunnellers belong to a group (genus) of beetles called *Onthophagus*. There are 2 species in Manitoba, and 3 species in Canada

The rollers are the best known type of dung beetle by many, as they are often seen in nature documentaries. Adults of rollers form balls of dung from fresh manure, which they then roll some distance from the pat prior to burial. In Canada, species of rollers belong to a group (genus) of beetles called *Canthon*. There is 1 species in Manitoba, and 6 species in Canada.

The adult activities of tunnellers and rollers can remove most of a fresh dung pat from the soil surface in less than a week. Tunnellers and rollers typically are larger than dwellers.

Incredible Strength

Dung beetles display some incredible feats of strength. Some rollers can roll a ball many times their weight. The horned dung beetle (*Onthophagus Taurus*) takes the gold though. Just 10 millimeters long, this beetle can move up to 1,141 times its own body weight. This is the equivalent of an average man moving two fully-loaded 18-wheeler trucks. Please don't try this.

By making food out of what would normally be considered waste, and a breeding ground for some nuisance flies, dung beetles are certainly an insect that must be appreciated. The introduction of specific dung beetles to Hawaii, and the Australian Dung Beetle Project are great examples why. Dung beetles were introduced to Hawaii from Africa as a way of controlling horn flies. Later, in the 1960s, dung beetles were introduced to Australia from Europe, Hawaii and Africa to deal with the dung problem created by introduced cattle. The native beetles found the foreign dung unpalatable, leaving it to litter the landscape. Native Australian species of beetle had developed alongside marsupials such as the kangaroo and wombat, which produce small, hard, dry and fibrous pellets of dung. Cattle were relatively recently introduced to Australia by European settlers and produce large, soft, moist dung pads. Thanks to the introduced dung beetles, pasture quality improved considerably and fly outbreaks were reduced.

Ed's. note: John Gavloski is an entomologist living in Carman, Manitoba. He writes a monthly article called "Incredible Creatures" for several rural newspapers in Manitoba. They are written at a basic level to introduce people to some of the common yet often not well known creatures in Manitoba, and hopefully enhance appreciation for wildlife. The above article was published in June 2022.

Jim Reimer's Wildlife Museum – A Dream Realized
By Robert E. Wrigley

Jim using his long lens to photograph wildlife in the Southwest

While I was the Curator of the Assiniboine Park Zoo, I received a visit one afternoon from a gentleman named Jim Reimer. He informed that he often came to the Zoo to photograph and study the animals, then finally revealed his long-held dream project – to use his experience as a taxidermist to establish a natural-history museum at his home property in St. Annes, Manitoba. He went on to describe how he planned to convert two large buildings (formerly hosting his honey-bee operation) into exhibit halls. He asked whether it would be possible to acquire deceased zoo specimens for his museum. Being a former curator at the Manitoba Museum, I had always been a keen supporter of salvaging wildlife specimens for education and research, so I gladly arranged for Jim's request with the Zoo's veterinarian (an Arctic Fox and American Flamingo were available at the time). On leaving my office, he kindly donated a couple of expertly prepared small-mammal skeletons for the zoo's educational program.

Jim putting the finishing touches on two Cougars.

A busy taxidermist's shop where Jim creates his magic with wildlife mounts.

Over the years, Jim and I became close friends, travelling together on numerous day-long, insect-collecting trips around southern Manitoba, and on lengthy excursions as far afield as Florida, Texas, Arizona, South Dakota and Colorado. Several times a year, friends and I enjoy visiting Jim's museum to see his new taxidermied mounts and exhibits. Having observed wildlife dioramas at dozens of major museums, and obtained mounted animals from other taxidermists over the years for the Manitoba Museum and the Oak Hammock Marsh Interpretive Centre, I became increasingly aware just how talented and innovative Jim was in preparing specimens, ranging from a Grizzly and Cougar to a giant Indian Python, and to delicate moths and tiny beetles. He prepared a Black-billed Magpie with one half of the body feathered, and the other half with the skeleton exposed to reveal the bird's structural morphology. A variety of fresh fruits and vegetables were exquisitely recreated in plaster or rubber, and painted in fine detail. Intact frozen fish from Chinese markets in Winnipeg were skinned and painted so realistically that they appeared freshly hauled from tropical seas. Pleasingly shaped pieces of driftwood, a rusty strand of barbed wire wrapped around an old post, a long-

abandoned bird house, a pitted, fossilized Bison horn core, anything from Nature that caught his artistic eye found a place as a wildlife prop in his ever-expanding museum.

A case of Manitoba moths.

Jim began his interest in taxidermy at age 13, when his mother helped him with mail-order taxidermy lessons costing $10.00 ($2.00 down, $1.00 a month). He admitted that his start was a very rough and rocky one, but eventually his persistence prevailed, and he received his taxidermy diploma at the age of 15. Jim went into beekeeping for the next three decades, producing about two million pounds (907,200 kg) of honey. Also during this time, Jim pursued commercial taxidermy in winter, along with other part-time jobs. Following retirement, he looked at his two unused honey buildings and wondered what he could do with them.

A case of insects.

The one day, his former dream of a natural-history museum came to mind, and turned instantly into an all-consuming passion. For the following decade, he worked steadily on this project, giving up all commercial taxidermy requests. Receiving endorsements and permits from both provincial and federal governments, he was then able to salvage dead specimens, the vast majority coming from road and window kills, and natural deaths (Jim does not hunt.). Besides the ones he personally finds, he also receives specimens from friends and neighbors, the Assiniboine Park Zoo, University of Manitoba, Wildlife Haven Rehabilitation Centre, Westman Reptile Gardens, Canadian Wildlife Service, and Manitoba Conservation. Hunters and trappers have supplied some of the larger specimens such as Gray Wolf, Cougar and Wolverine. Jim has now filled roughly 200 square metres of space in the two connected buildings, and is contemplating adding an adjoining facility to accommodate the many hundreds of specimens already mounted or stored in his freezer.

Jim has utilized his carpentry skills to manufacture all his own display and specimen-storage cases (two of which he made for my insect collection). Displays of butterflies, moths, and beetles are featured, but many other types of arthropods are shown as well. In fact, he hosts which is likely the largest public display of insects in the province, and many thousands of other insects (collected on our numerous field excursions) are located in dozens of trays stored safely inside his entomological cases. Other eye-catching exhibits are mounts of local species of fish shown against a rocky background, song birds, pheasants, hawks, owls, and eagles, bird eggs, sea shells, furbearers, mammalian and avian skulls, vertebrate and invertebrate fossils, full-size replicas of a mammoth tusk and femur, and a partial mammoth molar that Jim found on his property's expansive, commercial gravel pit. Other display cases present a diversity of seeds and fruits from all over the world.

Jim is also an expert wildlife photographer (and passionate ornithologist) with a history of travel to exotic locals that would be the envy of any naturalist – Russia (Moscow to Siberia), Burkina Faso, Papua New Guinea, Australia, Mexico, Belize, Honduras, Haiti, Venezuela, Brazil, and others. In addition to photographing nature and people at these locations, Jim also contributed his time and knowledge to construction projects (e.g., schools) benefiting the lives of local people.

Although Jim considers his museum far from complete, he opens it to school groups and members of the public with advance notice by contacting him for times and directions (goldenb1948@gmail.com; 1-204-355-4236). Admission is free; visitors are welcome to make a donation to fund future exhibits. Every time I visit Jim's wildlife museum, I am astonished at his innovative approaches and techniques in preparing new exhibits. It is so heartwarming to witness my friend's spectacular success in achieving his dream.

A display of a Fisher and its prey – a yellow-haired western Porcupine.

A display of Rock Pigeons.

A tropical display case.

A hall view with a Muskox, variety of owls, and Snowshoe Hares.

An unfinished hallway featuring seeds and fruits.

A hallway of fossils, skulls, fish and birds.

A variety of freshwater fishes.

Displays of skulls and shells.

Insect Jim's photo of a boy with a stick insect in a remote village in Venezuela.

A display of fruits.

Souvenirs (Part 1)
By Todd Lawton

My collection of beetles spans almost 40 years of fieldwork. Through a process I have thoroughly enjoyed I have produced the most complete Canadian collection of North American *Scaphinotus*, (snail-eating beetles), and Cicindelinae, (tiger beetles), as well as extensive collections of other Carabidae, Cerambycidae and Scarabaeidae. In a way my specimens are also souvenirs; I have a deep personal attachment to them. Glancing through my Cornells I am flooded with memories of wonderful days in the warm sun, favorite places, spectacular scenery, venomous spiders and snakes, colossal tornadic storms and sharks (but never a Sharknado). They also represent wet feet, quicksand, sunburns, wasp stings and substandard hotel rooms with peculiar ambiance. This is probably why I am often reluctant to part with my specimens and feel a little betrayed when I see material I collected, and traded with other collectors, for sale on e-Bay at exorbitant prices, or worse, for under a dollar! This article is a stroll down an entomological memory lane, so find some sturdy footwear and get ready to flip a few stones, roll a couple logs, and wildly swing nets at nothing in particular.

My *Cicindela formosa* from near Dorothy, Alberta, reminds me of my first inter-province collecting trip in the mid-1980's. On the final night I sat in my car under the lights of a Kmart parking lot, somewhere in the southern prairies, admiring my measly half dozen, mainly teneral specimens. Of course I already had plans for the following spring. My *Cicindela repanda* from Alamosa, Colorado, helps me recall that while walking on a wet sandbar on the Rio Grande I sunk to my waist in quicksand and had to make an awkward escape. I learned that when water percolates to the surface of wet sand it's a warning to quickly move to more solid ground! My *Cicindela f. formosa* var. *fletcheri* will remind me that I mired a rental car down to the frame in a sand pit near the Empress Sand Dunes, Alberta, (in my opinion the best *Cicindela* collecting site in Canada). I was saved by a farmhand who, by an incredible stroke of luck, happened to cross my path. Bill, another Winnipeg collector, and I narrowly escaped disaster while black lighting on a California salt flat in 1987; we noticed that the car was slowly sinking and were very lucky to escape by pushing planks from a broken picnic table under the wheels. We received a lot of disapproving looks in the days following, driving a flaking mud ball down the glamorous streets of Los Angeles. I also had cars pulled from a swamp in northwestern Ontario, out of another sand pit in Utah, and from a remote California canyon (the latter resulting in a $700 bill).

My *Scaphinotus parisiana* specimens speak of the nights I weathered tornadic storms on the north face of Magazine Mountain, Arkansas. The first storm dropped between 5 and 8 inches of rain in an hour, I was completely soaked except for a small dry circle under the bill of my baseball cap. The second storm, a month later, ripped three large trees down onto the trail. It was a surreal scene, the huge splintered trees, starkly menacing in my flashlight beam, the air heavy with the smell of ozone and smashed wood. But from these two nights of metrological mayhem I had five specimens of *S. parisiana*. It seems there is more carabid activity on windy nights, perhaps the sounds of rustling leaves

helps these insects remain less detectable; they are often active until heavy rains begin. My precious specimens of *Scaphinotus petersi kathleenae* will stir up memories of the night I waited out a monsoon with driving rain and hail, my back against a rock face, at 8500 feet on Mount Wrightson, in southern Arizona. The descent down Wrightson in full darkness was the most difficult hike I've ever done. I swore at the time I would never do it again but I have now completed it four times. My left knee tells me it was the last.

A series of *Cicindela latesignata* specimens from southern California call to mind wading across a river's mouth while 15 sharks swam past my legs. My *Cyclotrachelus* from Mount Davis, Pennsylvania will remind me of the very large partially-melanistic timber rattlesnake that I found waiting in ambush in a thick clump of rhododendron. A lovely series of *Cicindela decemnotata* helps me reminisce about the evening I met nine Prairie Rattlesnakes on a narrow trail along the Bow River in Alberta just before dark. I've lost track of how many times I've encountered copperheads, water moccasins, and various rattlesnakes in the southern US. I've never lost my deep instinctual fear of snakes and every time I encounter one the jolting effect is similar to gulping down a caffeinated energy drink.

My collection of tiger beetles will unfortunately remind me how I lost the results of 30 years of fieldwork and several years of writing by teaming up with the wrong individuals. You can never be too careful with your intellectual property.

My tenebrionidae from the San Bernardino Mountains in California will remind me how at twilight one evening I rushed to grab a long-legged arthropod only to discover I had a female Black Widow Spider clenched between my fingers!

My lovely specimen of *Glycobius speciosus*, The Sugar Maple Borer, will bring to mind Van Hook Glade Campground, a favourite campground in western North Carolina. I watched as the beetle carefully descended and lit on the hood of my car. Initially I mistook it for a large wasp but thankfully I chose to investigate. My specimens of *Scaphinotus viridis* will remind me of the night I was questioned by West Virginia Police. They had found my car parked deep in the woods and peeked inside, spotting plant pots (for pitfall traps), a knife (cutting bananas for ground beetle bait), and the leafy tops of strawberries I had just eaten. They decided this could only mean I was a drug cultivator establishing a marijuana grow site!

I collected my series of *Anillinus langdoni*, (tiny, eye-less carabidae), from Joyce Kilmer Memorial Forest, North Carolina, on the day I locked my keys in my car. The very accommodating Campground Host knew of a loop in the mountain road where there was one bar of cell reception and called a locksmith. The locksmith became lost on his way and in the end I forfeited almost half a day of fieldwork to this misadventure.

My *Scaphinotus andrewsi* from near Boone, North Carolina, will remind me of the worst veggie burger I've ever had; it was badly freezer-burned but I wasn't aware of this until I was back in the mountains. The patty was so tough it could have been used as shielding on a space shuttle! In southern American restaurants I got used to having the cooking crew peek from the kitchen to see the weirdo ordering vegetarian food. "Tastes like sand," I once heard them say. It doesn't. I know this because I've inadvertently eaten a lot of sand; hand washing isn't possible while doing fieldwork.

To be continued in part 2.

Extension Entomology Update: Crop Diagnostic School 2022
By John Gavloski, Entomologist, Manitoba Agriculture

One of the annual extension events that Manitoba Agriculture hosts is the Crop Diagnostic School. This year the school ran over 4 days, from July 5 to 8th, at the University of Manitoba Ian N. Morrison Research Farm in Carman. Each day was a different group of participants, and featured lessons on entomology, plant pathology, weed science, soil science, and cereal and pulse crop production. After a couple of years of running virtual schools, this year we were back in-person. About 315 people attended the school this year. Agronomists make up the largest group attending the school, and about 40 farmers attended.

Jordan's insect monitoring in canola station

The entomology unit at the Crop Diagnostic School has been co-presented by Jordan Bannerman, from the University of Manitoba, and myself since 2013. This year, Laura Schmidt, with Manitoba Pulse & Soybean Growers, joined us in presenting. Jordan focused on monitoring and economic thresholds for insects in canola, including diamondback moth, bertha armyworm and Lygus bugs. Demonstrations included using a sweep net to collect insects from our canola plots, shaking plants for diamondback moth, and quadrat counts for berth armyworm. Laura discussed a newer insect in Manitoba, the pea leaf weevil, which was first detected in Manitoba in 2019, as well as pea aphids on peas and faba beans, soybean aphid on soybeans and blister beetles. In the plots of field peas and faba beans, participants were also able to find some natural enemies of aphids, including aphid mummies (parasitized aphids), hover fly larvae, a minute pirate bug, green lacewing eggs, soft-winged flower beetles and lady beetles.

My session began with a survey on beneficial insects, to determine how many people consider beneficial insects when making crop management decisions, impediments to better conservation of natural enemies, and how much people knew about some newer resources on beneficial insects, and the Field Heroes program. 252 people completed the survey. Results will be presented in the Advances in Biological Control Symposium at the joint Annual Meetings of the Entomological Societies of America and Canada in November. The survey also helps prepare us for the 2023 Crop Diagnostic School, where the theme will be beneficial insects. Also included in my session was information on a new harmonized scouting protocol for European corn borer, which can be used in many of its host crops, and information on cabbage seedpod weevils (another newer weevil in Manitoba) and grasshoppers.

Laura's pulse insect station

The entomology lessons follow a four-year rotation at Crop Diagnostic School, with a given theme being repeated every four years, updating new developments and reinforcing techniques and knowledge to help those scouting crops. The beneficial insects unit, the theme for next year, is one we always enjoy doing.

2021-2022 Executive

Position	Name	Email	Phone
President	Kateryn Rochon	entsocmanitobapres@gmail.com	(204) 474-8640
Past President	Jeffrey Marcus	jeffrey.marcus@umanitoba.ca	(204) 474-9741
President-elect	Alberto Civetta	a.civetta@uwinnipeg.ca	(204) 786-9436
Regional Director (ESC)	Jason Gibbs	jason.gibbs@umanitoba.ca	(204) 474-7485
Member-at-Large	Joel Gardner	gardner1@myumanitoba.ca	
Secretary	Jade Tanner	entsocmanitobasecretary@gmail.com	(204) 223-4193
Treasurer	Kathy Cano	entsocmanitobatreasurer@gmail.com	(204) 925-7928
Proceedings co-editors	Jason Gibbs Kelsey Jones	jason.gibbs@umanitoba.ca kelsey.jones@canada.ca	(204) 474-7485 (Jason)

2021-2022 Committee Chairs

Committee	Name	Email	Phone
Endowment Fund	Richard Westwood	r.westwood@uwinnipeg.ca	(204) 786-9053
Finance	Kathy Cano	kathymae@shaw.ca	(204) 925-7928
Newsletter	Kelsey Jones Kateryn Rochon	kelsey.jones@canada.ca	
Youth Encouragement & Public Education	Bridget White	whiteb2@myumanitoba.ca	(204) 474-9439
Social	Lavanya Ganesan	lavanyazoe@gmail.com	
Scholarships & Awards	Desiree Vanderwel	d.vanderwel@uwinnipeg.ca	(204) 783-9083
Fundraising	Ian Wise	iwise@shaw.ca	(204) 890-3560
Scrutineer	John Gavloski	john.gavloski@gov.mb.ca	(204) 745-5668
Web Page & Archives	Jordan Bannerman	jordan.bannerman@umanitoba.ca	(204) 480-1021
Common Names of Insects	Jason Gibbs	jason.gibbs@umanitoba.ca	(204) 474-7485