

The Entomological Society of Manitoba  
**Newsletter**



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**ABOUT THE ESM NEWSLETTER**

The Entomological Society of Manitoba Newsletter 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.



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## Editors' Comments



Welcome to the first issue of the 49<sup>th</sup> edition of the Entomological Society of Manitoba Newsletter. This is the first issue with our new co-editor, Justis Henault. We are excited to have him on board and he has already helped improve the newsletter immensely!

As we are sure you have noticed, the 49<sup>th</sup> edition is sporting a new look – a photo title page, bold headers and more colour. Everyone is welcome and encouraged to submit insect photos to the *ESM Newsletter*. We are hoping to be able to change the photo on the title page for every issue.

Happy reading!

Kelsey Jones & Justis Henault

*ESM Newsletter Co-Editors*



# President's Message



As I am writing to you, and looking through my window, my hope is that you are all staying warm. It has been a bit up and down with the weather this winter. It will all pass, and soon we will be enjoying the warm days, and perhaps complaining about how hot it is and how annoying those mosquitoes can be. As I take a break from other responsibilities, I reflect on what a privilege it is to have the opportunity to serve as your president. I am relatively new to the Society and the road is still one of constant learning, so I would like to thank the many people who have kindly helped me when I had questions. Our now Past President, Kateryn Rochon, has been and continues to be a great support and someone who is always willing to take upon different roles to support the ESM. Big shoes for me to fill! Many thanks to all members of the Executive that are always ready to take up different tasks and responsibilities. Moreover, as I mentioned during the last AGM when I officially took on this role, I am always interested in hearing from members whether it is questions or suggestions you might have. I am here to try to facilitate/help our society's functioning.

Since I took over the presidency, the ESM Executive has been working on a number of issues. An *ad hoc* committee has been tasked with reviewing and updating our current committee guidelines. We have also started looking at digitalizing most of the ESM documentation. Last November the ESC Board accepted our invitation to co-host the Joint Annual Meeting (JAM) in Winnipeg in 2026 and we have been asked to identify a Chair and a Treasurer for the LOC by the fall of 2023. Kateryn Rochon has taken upon the role of Chair (Thanks Kateryn!) and we are now looking for someone to volunteer for the role of Treasurer. If you wish to take on that role, let Kateryn or me know. We also have our Annual General Meeting organization coming up. Putting together the AGM is a big job that requires the help of volunteers to organize social events, meeting arrangements, fundraising, etc. If you want to be involved, reach out and I will put you in touch with the Scientific Program Chairperson. Vincent Herve, our President Elect, and I attended, on February 17, a meeting of the Entomological Societies of Canada (MESOC). There was an opportunity to hear about upcoming and future planned JAMs. FYI, the 2023 will be held in Saskatoon on October 15-18, so mark your calendar. The ESC is reworking its current strategic plan, so if you have any input on how the ESC can better serve the entomological communities & societies of Canada send me an email with your thoughts. On a different matter, some of you might know or be interested to know that Winnipeg will be hosting the 2023 Canadian Society for Ecology and Evolution and Canadian Botanical Association joint meeting on June 11-14.

After a long period of restrictions, it has been nice to be able to go back to the classrooms and the labs. We can now plan for in-person meetings and enjoy some of the personal interactions we missed before. The inability to engage in live social gatherings has resulted in a gain of different tools that we now routinely use to connect online. It is an interesting period of metamorphosis; I feel we are emerging into better times.

Alberto Civetta

*President of the Entomological Society of Manitoba*



## Regional Director's Message



The Entomological Society of Canada is beginning a renewal process for its Strategic Plan. As this process gets underway any members would be welcome to share their input with the Regional Director, so it can be brought to the attention of the national society.

There was a recent call for nominations for awards from the ESC. Members of the ESM, especially students, are strongly encouraged to apply for such awards or nominate their colleagues. There is a great deal of entomological research going on in Manitoba, and as home to the only Department of Entomology, it would be excellent to see more recognition of work being done here at the national level.

The Joint Annual Meeting of the Entomological Societies of Canada and Saskatchewan: "Entomology in a Changing World" will be held in Saskatoon, 15-18 Oct. Early bird registration (at a significant discount) ends 01 Aug 2023. Please consider attending. Deadline for submitting a presentation is 15 Aug.

Meeting website: <http://entsocsask.ca/esc/esc-ess.html>

Jason Gibbs

*Regional Director to the Entomological Society of Canada*



# Submitted Articles



## **Incredible Creatures: Green darners: A Migratory Dragonfly**

**By John Gavloski**

Ask someone to name an insect that migrates south for the winter, and most people will likely say monarch butterfly, which is correct. But there are other insects that migrate south for the winter as well, including some species of dragonflies. Dragonfly migration has been observed on every continent except Antarctica, with some species performing spectacular long-distance mass movements. Some migratory species of dragonfly that can be found in Manitoba include the common green darner, the variegated meadowhawk and the wandering glider. This article will feature a rather large dragonfly, called the common green darner, where part of the population embarks on an incredible migration, while others known as the resident population don't. Sound confusing? Read on.



*Common Green Darner*

## **Distinguishing Darners**

In Canada there are 154 species of dragonflies. These are separated into 7 family groupings, one of which is called the darners (Aeshnidae). The darners include our largest dragonflies, and have long and slender abdomens, like darning needles. They also have large eyes, that meet broadly along a seam.

The common green darner dragonfly (*Anax junius*) has a bright green thorax. They have olive-green eyes and have a black 'bulls-eye' mark on the face in front of their eyes. Males and females can be told apart by the colour of their abdomens. The males' abdomens are an intense blue, while the females' abdomens are reddish brown, as in the photo for this article. They perch by hanging from vegetation, and sometimes can be found well away from water. The green darner in the photo stayed posed for us for an extended period of time along a hiking trail in Turtle Mountain Provincial Park. Part of the population of common green darners migrates, known as the migrant population, while another portion doesn't, the resident population.

## **Residents and Migrants**

Like monarchs, the migrant population of the common green darners embark on a multi-generational migration, where the generation that ends up in Canada in spring are not the same ones that left in autumn. No one individual makes the round trip. Common green darners from Manitoba form swarms and migrate in late August and early September to the southern US and Mexico. Once there, they lay eggs and die. The dragonflies that emerge will spend their whole lives in their southern location; it is their offspring that will migrate north in the spring.

The generation migrating north reaches the northern US and southern Canada in late spring. These migrants mate, lay their eggs in the water, and die by early-summer, just as the resident population emerges as adults. These residents live a month or two as adults, depositing their eggs in late summer as the migrant adults emerge. The young, called naiads in dragonflies, of the resident population overwinter under the ice in a state called diapause, and take 10 or 11 months to mature (possibly more, in chilly waters), while the migrant naiads (which don't overwinter) need less than half that time to mature.

## **How far and fast can they fly in a day?**

Researchers from the University of Guelph attached miniaturized radio transmitters to common green darner dragonflies and monarch butterflies and tracked their autumn migratory movements through southern Ontario and into the United States using an automated array of over 100 telemetry towers. The farthest estimated distance a green darner travelled in a single day was 122 km with a wind-assisted ground speed of up to 77 km per hour. The farthest estimated distance a monarch travelled in a single day was 143 km at a wind-assisted ground speed of 31 km per

hour. For both species, increased temperature and wind assistance increased the pace of migration,

Green darners may be one of the first and last dragonflies seen flying in northern climes like Manitoba. Migrant or resident, they are both beautiful and beneficial insects.

*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.*



**Souvenirs: Part two**  
**By Todd Lawton**

When I have a free moment I like to pull out a random drawer in my Carabidae collection and reminisce about a life spent collecting and studying these intriguing insects. I've embarked on over 70 collecting trips of one to three weeks in length through the United States and Canada. I can recall every collecting locality. I find pinned insects so much more intriguing than standard travel mementos, those mass-produced poly-resin figurines so abundantly available in "funky" gift shops. So prepare yourself for a stroll down an entomological memory lane, all that's required is a love of insects.

My series of *Scaphinotus infletus* and *S. fissicollis* remind me of many joyous days searching for insects at Gunners Pool in Stone Co., Arkansas. It's one of my favorite recreation areas despite witnessing a couple "fun with guns" incidents when too many beers were had by my neighbours in the campground. My best collecting day was after a controlled burn when all the leaf litter was eliminated; I found several *Scaphinotus* under stones on a rocky slope.

A series of *Cyclotrachelus vinctus* came with a price. While collecting them in a bottomland forest in North Carolina I caught another "bug," Lyme disease. After showering I was struck by how many freckles I had on my abdomen before realizing they were actually larval ticks. A couple weeks later I developed three "bull's-eye" rashes on my shoulder and back. A round of antibiotics provided relief.



*Todd Lawton's Lymes rash before treatment.*

My *Scaphinotus manni* specimen will remind me how my collecting companion, Trent, an architect from Olympia, waited patiently while I rushed to set pitfall traps along an intermittent stream in Steptoe Canyon, Washington. It was odd to see *Scaphinotus* in this arid steppe landscape; the beetles were active in thick clumps of brush, wherever the stream reached the surface. An *Amblycheila schwarzi* specimen helps me reminisce about coming face to face with an angry bull in a California canyon at two in the morning. A series of *Omus californicus lecontei* remind me how my traveling companion, Richard, tumbled head-over-heels down a steep slope at the mouth of Warthan Canyon in California and was miraculously unhurt.

Bill, a Winnipeg collector, and I stayed up all night checking hamburger we had placed under pieces of wood hoping to catch *Omus californicus* on the outskirts of Atascadero, California. We also met a homeless man in the woods who was searching for "crawdads," fortunately by the end of the day we were all successful. That event was my first encounter with *Scaphinotus*, snail-eating ground beetles, which I would vigorously pursue for many years

My specimens of *Scaphinotus viduus* x *S. irregularis* were acquired on a night hike up Mount Rogers in Virginia. I've made over 100 collecting trips at night, generally for carabids, using bananas soaked in various sugary mixtures as bait. One of the major challenges of night collecting is not getting lost; on one chilly night in Oregon I had to sleep under a log after becoming disoriented in dense forest. At daybreak I followed traffic noise until I intersected a main road; I then returned to my hotel room for a couple more hours of sleep.



*Robert Davidson of the Carnegie Museum of Natural History describes Scaphinotus viduus x S. irregularis to myself (right) and colleagues from Clemson University on a Virginia collecting trip.*

My friend Frank, a Maine physician, has hosted several beetle collecting retreats in the SE USA, inviting researchers from the Carnegie Museum of Natural History, Clemson University and myself. These events were always a lot of fun; unfortunately I can't attend the gathering in the spring of 2023 but I will always have the specimens I acquired during those previous adventures. I plan on attending the next gathering.



*Prime Scaphinotus habitat on the hike up Mount Rogers, the highest point in Virginia. These beetles are often found hunting on the trunks of trees.*

Any of my specimens from Florida will summon up memories of the crushing summer heat in the southeastern states. I'll probably wince when I see my series of *Cicindelidia hornii* from near Willcox, Arizona. I was collecting in dry grassland and at one point had to scale a barbed wire fence; when I was half way over the bottom wire gave way and my upper body came down hard on the metal fence post! Fortunately it was flat-topped and struck me directly on my sternum so I wasn't impaled, avoiding the humbling headline "Entomologist pinned in Arizona." On another occasion, in Texas, I was almost skewered by rebar when I fell into a pit filled with construction waste.

A lovely series of *Cicindela limbata hyperborea* from northern Saskatchewan speak of the night a curious bear tried to paw his way into my tent, with me in it. It was a truly terrifying experience and thoughts of that night have crossed my mind on every camping trip since. Some of my *Ellipsoptera blanda* were acquired when my friend Jeff and I crossed the Black River in Florida in a flimsy raft. We landed on a sand bar covered with intoxicated sunbathers from Alabama and tense interactions followed! In 2022 I assisted Aaron, a U of S student, who was collecting *Cicindela*

*formosa* DNA samples in Manitoba for a taxonomic review; I took him to some of my favourite collecting localities.

My *Geotrupes ulkei*, (the only flightless North American *Geotrupes*), remind me of the day I bought wine coolers in Birmingham, Alabama, and was told by the young female cashier that I should be consuming more "manly" beverages. It's always been a struggle to find beer for my pitfall bait/preservative mixture in Arkansas where many of the counties are alcohol-free (perhaps if firearms were prohibited first there wouldn't be a need for alcohol bans)!

A series of blue *Cicindela lengi* remind me of Bert and John Carr, legendary Albertan collectors, who shared locality information and invited me into their home during trips in the 1980s. My collections of Manitoba *Agonum* remind me of my friend Claude, a Quebec collector, who taught me how to more effectively "water tread," a collecting technique that he uses to acquire aquatic beetles.

I discovered a new species of *Scaphinotus* in Arkansas in 2013, and the specimens I set aside as a type series specimens remind me of the kind and encouraging words of Robert Davidson of the Carnegie Museum of Natural History, "I think you pretty clearly have something new and rather wonderful." I provided him with instructions on how to find the location and he was successful in finding a few specimens for the Carnegie Museum. It's an incredible species, almost twice the size of the others in the subgenus, *Nomaretus*, and brilliant purple. I found them in scree slopes where I had set with pitfall traps hoping to capture the closely related *Scaphinotus cavicollis*.

A gorgeous reddish-gold specimen of the seldom-collected *Agonum quinquepunctatum* will remind me how exciting the Gillam, Manitoba, area has been for me. I've collected several northern and arctic species such as *Miscodera arctica*, *Pterostichus brevicornis*, *Thanatophilus trituberculatus*, *Dicheirotichus mannerheimii*, *Pelophila borealis*, *Amara hyperborea*, *A. pseudobrunnea* and others. I've also found a few familiar southern species, such as *Platynus decentis* and *Bembidion scopulinum*, which for some reason I'm always surprised to see in the north. American collectors have been quick to make exchanges with me to obtain these northern specimens and this has helped me keep the excitement of new discoveries alive.

My rare blue-phase specimens of *Ellipsoptera nevadica* will remind me of my chance meeting with Steve, a Nebraskan collector, on a small creek in New Mexico. I also ran into Matt, another Nebraska collector I had been exchanging specimens with, at a site in the Bearlodge Mountains of Wyoming, where a rare brilliant green form of *Cicindela formosa* is found. It's not unusual to meet other collectors at "classic" sites in the US, especially in the SW during monsoon season. I met accomplished Canadian collector Reggie Webster at a picnic area in Madera Canyon, Arizona, and during a conversation with another collector, from New Jersey, I mentioned I was seeking *Scaphinotus* and he suggested I contact "Todd Lawton." If you were to drive through the Bog Spring Campground in Madera Canyon during late July or early August you would see many

entomologists socializing and preparing equipment for collecting. Spruce Knob, the highest point in West Virginia, literally and perhaps figuratively, is another place where insect collectors, specifically Lepidopterists, often cross paths and nets to compete for unique swallowtails.

When I look at my worldwide *Carabus* collection, (about 7500 specimens) I recall the legion of international collectors who assisted me through their trades. It's good to know that specimens from Manitoba are now represented in collections around the world.

*Todd Lawton is a Winnipeg collector who has won both the Norman Criddle and Bert and John Carr Award from The Canadian Entomological Society.*

## Poweshiek Skipperling Development at Assiniboine Park Zoo

By Kirstyn Eckhardt, keckhardt95@gmail.com

I have been photographing Poweshiek skipperling larvae as part of my MSc research into their growth and development. Assiniboine Park Zoo has kindly allowed me to make observations on the Poweshiek in their *ex-situ* program. I began taking photographs back in May 2022 when the 2021 Cohort came out of diapause. Then, in July I began measurements on the newly hatched larvae of the 2022 Cohort. I photographed larvae twice per week to detect a moult soon after it had occurred (Figure 1).

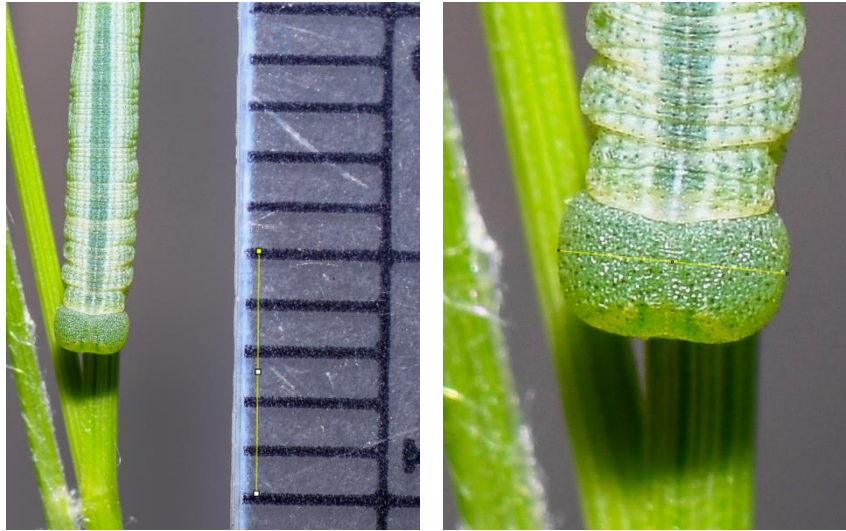


Figure 1. K. Eckhardt preparing to photograph Poweshiek larva at Assiniboine Park Zoo, Winnipeg.

Head capsule width is a more reliable measure of size than body length, since larvae may change drastically in length depending on how “scrunched” they are. The protocol I used to photograph and measure larvae is similar to the one developed by Adam Grottoli at APZ. My methods differed in two respects. First, due to the frequency with which I needed to take photos, I decided to photograph larvae while they were on the grass to minimize disturbance. I also used an external camera flash (set to the lowest brightness necessary) rather than a fixed lab lamp positioned over the larva.

Photographs were taken with a Nikon D7500 fitted with an 85mm lens and set on a table tripod. I used manual mode with the following settings: f/16, ISO 100, 1/80s. I held a small ruler parallel to the larva to serve as a scale for analyzing the width of the head capsule. It was important to have the ruler in the same focal plane as the larva to ensure that both were in focus. I manually focused using the camera’s focus ring. I used ImageJ software for head capsule measurements. I provided a known distance in millimeters by drawing a line across the ruler (Figure 2). I then drew

a line across the width of the larva's head (Figure 3). ImageJ then converted the width from pixels into millimetres.



*Figure 2. (left). Setting scale in ImageJ. Yellow line indicates the scale is 5 mm. Photo: K. Eckhardt*

*Figure 3. (right). Measuring head capsule width in ImageJ. Yellow line drawn across maximum distance of head capsule. Photo: K. Eckhardt*

I also installed "moult trays" – 4 x 4 in round plastic plant trays used to catch exuviae and shed head capsules. I cut a small hole in the middle for the grass and placed one tray in each larval enclosure. The presence of exuviae served as another way to confirm that a moult had occurred. Initially I was not sure whether the size increase from one instar to the next would be detectable by measurement alone. But as it turned out, I observed at least a 20-30% increase in head capsule width from one instar to the next (for most instars). Exuviae, when present, were usually found stuck to the grass. Shed head capsules were sometimes found in the moult tray. Larvae that had presumably recently moulted were often seen on the same blade of grass below their shed skin (Figure 4). I also noticed on several occasions that larvae were positioned with their heads directly below or even touching their exuviae. One larva was consuming their exuvia (Figure 5). If larvae do sometimes eat their shed skin, this could explain why I did not find exuviae every time a moult occurred.



Figure 4. (left). *Poweshiek* larva P211906 recently moulted to 6th instar. Arrow indicates exuvia on grass. Photo: K. Eckhardt

Figure 5. (right). *Poweshiek* larva P220906 consuming their exuvia. Photo: K. Eckhardt

These head capsule measurements are currently being used to determine the overwintering instar for *Poweshiek* in Manitoba. This spring, I will continue to monitor the 2022 Cohort once they emerge from diapause at the Zoo.





# Updates From ESM Members



## **ESM Outreach Events**

### **By Kirstyn Eckhardt**

The first ESM outreach event of 2023 took place on February 10, when four volunteers from the Entomology department visited Oakenwald School in Winnipeg. We delivered three insect presentations to a total of 60 Grade 3 and 4 children. They were eager to learn more about insects and to share with us what they already knew! We talked about how to recognize insects from other arthropods, as well as the different kinds of insect life cycles (complete vs incomplete metamorphosis). We also talked about how climate change is impacting insect populations using case studies such as the mountain pine beetle and Edith's checkerspot.

## **Published by ESM Members**

Deanna Dodgson and Robert E. Wrigley. 2022. First record and ecological observations on the blister beetle *Tricrania sanguinipennis* (Say, 1824) (Coleoptera: Meloidae) in Manitoba. Nature North.

Check it out here:

[http://www.naturenorth.com/spring/Blister Beetle/Blister%20Beetle%20\(Tricrania%20sanguinicolis\)%20in%20Manitoba.pdf](http://www.naturenorth.com/spring/Blister%20Beetle/Blister%20Beetle%20(Tricrania%20sanguinicolis)%20in%20Manitoba.pdf)





# ESM Executive & Committees



## 2023 Executive

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