



Minnesota Dragonfly Society

Winter 2017

Newsletter #8

**Ensuring conservation
of Minnesota's dragon-
flies and damselflies
through research and
education.**

PRESIDENT'S LETTER by Angela Isackson

Dear MDS members, volunteers, and fellow board members,

I am not only honored and privileged to serve you as President, but I'm humbled by the many outstanding, inspiring, and tireless leaders who keep the nets swinging and dipping to further spread our mission year-round. They are the Board Members (14 strong), committee chairs, volunteers, and the many new friends we make along the way. I'm grateful to work with such passionate and hard-working individuals and am excited to see where they will continue to take MDS in 2018.

A special THANK YOU goes out to vice-president, Ami Thompson, for her support in co-leading this amazing group, especially in a year of many landmark personal events for myself. In a busy year of wrapping up our first big grant, applying for new grants, and continuing our enormous growth, she stepped in to help manage our busiest time of the year. This is truly what makes MDS a success, the people and mutual support. It was not only Ami that stepped in to take more on but fresh new faces willing to test their abilities to lead first events or serve as chair to a committee.

Instead of sharing shocking numbers on how many events or surveys MDS made possible, I feel the lesson this year is elsewhere; at least for me. Because of MDS, I can honestly say I've grown in many ways, both professionally and personally. It's my own hope that you have too and that you will continue to grow in the future as we head into 2018 and beyond.

Cheers to 2018 as we plan for hosting the national conference for the Dragonfly Society of the Americas (DSA) and utilizing another round of grant funding for the Ecofootprint project of "Finding Minnesota's Rare Dragonflies". I know there are many great milestones still ahead and with the dedication of this core group of individuals, anything is possible. Happy Holidays and Peace to all!

BUTT BREATHING BABY DRAGONS

by Curt Oien

Damselfly nymphs have three gills for breathing at the end of their abdomen and swim like a minnow with their "tail" going from side to side, allowing water with dissolved oxygen to flow past the gills as they swim.

Dragonfly nymphs have gills for breathing inside their rectum and swim using jet propulsion by shooting water from their butt, allowing water with dissolved oxygen to flow past the gills as they swim.

Yes, baby dragonflies are butt breathers! What if you had to defecate through your lungs? What about filth and disease? What's that like for a baby dragonfly?

While helping Ami Thompson with a research project, we noticed that the poop from a baby dragonfly looks like it is wrapped in plastic!

According to Philip S. Corbet in his book *Dragonflies (Behavior and Ecology of Odonata)*, "Before egestion, the rejecta are enclosed in a sac composed of peritrophic membrane that is periodically delaminated from the wall of the midgut. The resulting fecal pellet is voided promptly, thus not impairing rectal respiration."

It gets even better! Remember how baby dragons can shoot water out of their butts to swim? Well, they can shoot wrapped turds (fecal pellets) out of their butts too. Ballistic defecation!

According to Corbet's book, "Karen Wudkevich suggested that anisopterans, by defecating ballistically, thereby distance themselves from an alarm pheromone derived from their prey that persists in their feces and is still able to elicit an antipredation response in potential prey."

Corbet also says, "Stadia F-1 and F-0 larvae of *Erythemis simplicicollis* can project their fecal pellets

19cm vertically and 60cm horizontally." That means an Eastern Pondhawk can shoot a turd about seven and one-half inches high with it landing almost two feet away.

What would that be for a human? Estimating the length and height of a nymph compared to that of a human down on all fours...you could launch one about 100 feet in the air and have it land 150 feet away. That's half the length of a football field!

...these are just the babies!!!

THIRTEEN by Mike Sweet

Thirteen is a prime number, the title of a thriller movie, and feared by the superstitious among us. But to a plucky group of Rovers, it is the number of dragonflies and damselflies that they helped identify and newly document to occur in Jackson County, Minnesota.

During the weekend of 14-16 July, ten Rovers and five members of the Minnesota Dragonfly Society (MDS) joined forces to survey Jackson County for dragonflies and damselflies. Previous to this survey, the occurrence of only other nine species had been documented. We all met Friday night at Kilen Woods State Park to camp and use as our base of operations. The Park is a "no frills" area, but the shower building and campgrounds are nicely maintained by limited staff and volunteer camp hosts. The Park and an incorporated SNA (Prairie Bush Clover SNA) create an oasis of habitat for critters, within a larger landscape of agricultural fields, including the ubiquitous mosquito. The local population was obviously well trained in military tactics such as use of overwhelming force and guerilla warfare. Our defensive maneuvers utilized insect repellants, firewood, netting, and a bucket of citronella, resulting, at best, with a porous demilitarized zone.

The survey began Saturday morning with a presentation by MDS folks on Odonata (i.e., dragonflies and damselflies), their values, habitat requirements, and even breeding behaviors. With anticipation nearly bursting our collective seams, we began the search. We searched the campground, unmowed grassy areas, woodland, and prairie. A limited effort was even made wading into the Des Moines River to search for larval forms of Odonates, called nymphs. From the beginning, Rovers discovered that Odonates are easier seen than caught. At first, the nets were swung high and low, fast and furious, even thrown high with the hope that it would intersect the insect's flight pattern. But soon Barry netted a Widow Skimmer and Melissa nabbed a Common Green Darner. Rochelle helped immensely as she frightened the dragonflies toward other Rovers so they could be caught; some important efforts just don't get their due praise.

The day was hot, approaching 90 degrees, so we rested during early afternoon. Most of us (9) later traveled to Holthe Prairie SNA, a few miles north of the Park, for a late afternoon search. The access road, nearly one-mile long, an unsurfaced, single lane township road, was a bit too rugged for one of our three vehicles, a van, so, all but the driver piled into the two remaining vehicles and were driven to the mini-parking lot. Immediately, Odonates were everywhere and nets were quickly swooping in all directions with great effort, sometimes interlocking in mid-air. The energy was soon rewarded with a Halloween Pennant snared by Fran, Ruby Meadowhawk by James, and on and on it went as we moved through the prairie. Some people discovered that their arms were not as long as they thought, nor their agility as great as imagined. A drained stock pond was engaged with aquatic nets by several people, including Jerry. He poked, dragged, and swished the net with zeal through grasses and standing water in his effort to capture one, two, and more nymphs!

Back at the camp, a couple MDS folks had purchased something for us--ICE CREAM! Wow!! Later we had an informal potluck with everyone sharing meals. Food ranged from salads by Sheila and Therese to a seafood soup by Jen and Barry.

By survey time on Sunday, a few Rovers and MDS members had already needed to leave, with the remainder decamping and heading to the Des Moines River SNA, located a few miles north of Holthe Prairie SNA. We met the DNR Area Manager, Brad, who participated in the survey and, with normal vigor, we dispersed through this beautiful prairie and landed a few more species as well as duplicates of species previously caught.

During the survey, species that could be readily documented with photographs were processed after identification and then released alive. Of the 13 new species we documented for Jackson County, only four specimens were needed for physical documentation and eventual entry to the University of Minnesota insect collection. Those specimens were needed due to the difficulty of documenting identification of the species through photographic equipment at hand.

By noon, energy was waning and thoughts of the long drive home breached the intensity of the survey. So, after some final adieus (actually more like lengthy Minnesota-goodbyes), we parted ways and headed back to our respective homes. Perhaps, during the night, thoughts of capturing another new species (and sugar plums?) fully occupied all our dreams.....NOT!

DID YOU GET YOUR "SAVE THE DATE" POSTCARD?



MDS AND FACEBOOK

Following MDS on Facebook can really improve your ID skills and increase your dragonfly knowledge. Our Facebook page is a great place to find pictures posted requesting help with an ID, notices of upcoming events and news articles discovered by our members that are dragonfly related. If you haven't already joined our facebook page, please do so.

An example of how the site spreads the word, last August it was posted that Ami Thompson would be doing a presentation for Backyard Phenology to explore the phenology of dragonflies at the Native American Medicine Garden on the UMN St. Paul Campus. Her talk touched on her study of how climate change is affecting the phenology of common green darner dragonflies and how temperature impacts how and where they overwinter. Ami spoke to the attendees on the lifecycle of dragonflies and how they are connected to a variety of other facets of the ecosystem. For me it was a way to listen to Ami on her study updates and become exposed to the Native American Medicine Garden. Helping reach my goal to become a better Citizen Scientist.

Saturday, January 27, 2018 is the date for our Annual Membership Meeting. It will be held at the Lee and Rose Warner Nature Center at 15375 Norell Av N, Marine on St Croix, MN from noon to 4pm. There will be food, a silent auction, talks and swag for your purchasing pleasure. It is a great time to get together with others and talk about the "lifer" you found last season. You can renew your membership for 2018 and learn more about the events planned for this coming year.

MUCHO FUN AT THE MONARCH FEST by Perk

On September 9th thousands gathered at Lake Nokomis Park for the 2017 Minneapolis Monarch Festival. This year's event was bigger and better than last year. We were busy every minute of the day answering questions on dragonflies, explaining their life cycle and why we think they are the "best" insect. Both young and old gathered to see the adults and nymphs we had brought for show and tell. It is so much fun telling the story of what brought you to MDS and the important work to be done. If you haven't volunteered yet to work a booth, I highly suggest doing this one as you will smile from ear to ear as you talk dragonflies and watch the children frolic in their costumes. The goal of the festival is raise awareness of the need to protect insect habitat. So, come along next year and help us apply some of those 5000 tattoos we just got in!





Need something new for your wardrobe?

Buy a MDS t-shirt or cap.

MDS AT THE STATE FAIR by Perk

With Kurt Mead as a presenter this year at the DNR stage, MDS was fortunate to get a table on the grounds of the DNR Building. Perhaps not everyone of the record setting 117,877 people that attended the Great MN Get-together stopped by on 8/24/17 to see us, but many did. It is wonderful to have enthusiasts like Ron, Curt, Ami, Angela and the many other volunteers of MDS to spread dragonfly knowledge. Many of our visitors were in awe to learn the life cycle of the dragonfly and to hear that some are migrators. Having nymphs and adults that people can see and handle make for such a positive learning experience. A lot of visitors to our booth asked questions about the dragonflies overwintering. Some even showed us pictures on their phones of close-encounters they had with dragonflies either at home or at their cabins over summer. It seems like everyone has a story to tell of dragons perching on their boats or fishing rods and their pleasure of feeling like they were for that moment a dragonfly whisperer.

Kurt Mead for his dragonfly presentation was a great showman bringing out fantastic props that turned this young boy into a dragonfly right down to his 30,000 facets in each compound eye.

Additionally Ron not wanting to be outdone for the day's records, while waiting for his shuttle bus caught this county record Russet-tipped Clubtail.



ODONATA WORD SEARCH PUZZLE

C	O	E	M	E	R	G	E	N	C	E	I	B	T	M
L	L	A	N	I	S	O	P	T	E	R	A	C	P	U
A	S	O	O	V	I	P	O	S	I	T	O	R	A	Y
S	G	I	A	I	V	A	F	Y	J	R	R	R	T	F
P	O	M	E	C	K	E	V	J	P	R	E	I	O	T
E	M	U	X	M	A	G	M	I	L	T	S	N	D	S
R	P	P	P	R	N	L	P	A	P	O	Q	S	O	F
S	H	U	Z	I	K	E	R	O	N	D	B	M	N	G
W	I	W	K	O	I	E	G	I	N	J	U	I	A	A
K	D	W	P	B	N	Y	U	V	G	A	S	G	T	K
H	A	E	S	E	Z	R	B	L	Y	T	T	R	A	C
H	E	E	T	L	P	N	Y	M	P	H	I	A	H	E
R	E	S	P	I	R	A	T	I	O	N	G	T	T	R
F	R	O	N	S	T	H	O	R	A	X	M	O	V	C
C	B	U	B	K	O	Y	L	Q	X	D	A	R	S	I

Anisoptera
 Cerci
 Claspers
 Cloacal
 Emergence
 Epiproct
 Frons
 Gomphidae
 Hawking
 Migrator
 Nymph
 Obelisk
 Odonata
 Ovipositor
 Pruinosity
 Respiration
 Stigma
 Teneral
 Thorax
 Zygoptera

BONUS POINT: Which two words added together mean butt-breathing?

SAX ZIM BOG WORKSHOP by Perk

I was so excited for the bog trip that the 185 mile drive just flew by. Sax Zim Bog is located about an hour northwest of Duluth and is named for the two towns, Sax and Zim, that were abandoned when attempts to drain the wetlands for farming failed. Over 240 bird species are found within the boreal forest and bog along with 120 species of dragonflies too. The workshop began with all participants standing in a circle for introductions. Then once inside, Mark "Sparky" Stensaas told us about the bog and the efforts of the Friends of Sax Zim Bog to grow this prime habitat for birds and wildlife. We then were educated with presentations by Kurt Mead some history on the Minnesota Odonata Project Survey and how it moved to become today's MDS. Then Mitch Haag gave us an introduction to important dragonfly biology and the dragonfly families. From there we broke into small groups, jumped into the caravan vehicles and we were off!

It was such fun to watch everyone get their hands and boots dirty as we waded into the Whiteface Riv-

er, ran through meadows and walked the trails into the bog. There were smiles from ear to ear as we swooped nymphs from the river and caught several dragonflies on the wing.

Lunchtime came and we were entertained by Ami Thompson with her presentation on her scientific study on the effects of temperature on common green darner emergence. From there it was outside to see live specimens caught the day before in or around the Welcome Center. It was here that Ami and Clinton showed me how to identify the sex of a nymph.

After our noon break, it was back to our caravan where we were lead to a walk-in path to Toivola Swamp. We walked about ¾ of a mile where there was ample clearings and we moved out into the swamp to find even more than we hoped for. A great surprising find was a Sub-arctic Darner (just emerging). And the Emeralds (Ocellated Emerald, Black-tipped Emerald and the Delicate) were all beautiful. I saw so many lifers for me that day I smiled all the way home! In addition to the odes, Clinton also snagged a butterfly first, a Plurplish

Fritillary, for Sax Zim Bog. In all, these species were seen: River Jewelwing, Sweetflag Spreadwing, Powdered Dancer, Stream Bluet, Hagen's Bluet, Sedge Sprite, Canada Darner, Variable Darner, Zig-zag Darner, Subarctic Darner, Black-tipped Darner, Shadow Darner, Springtime Darner (nymph), Black-shouldered Spinyleg (nymph), Delicate Emerald, Brush-tipped Emerald, Ocellated Emerald, Belted Whiteface, Four-spotted Skimmer, Cherry-faced Meadowhawk, White-faced Meadowhawk, Autumn Meadowhawk, Band-winged Meadowhawk and Wandering Glider.

DRAGONFLY SURVEY IN MORA by Perk

It was a nice drive up to Mora, county seat of Kana-bee County and home to the gigantic Dala Horse. While our survey did not pull in a large number of locals to assist in the survey, we did have the youngest participants I have seen to date. These twins were excited to have nets to swing but pretty leery of "the bugs".



However, we did have one young woman, Mikayla, who was up for the challenge. To get into Tosher Creek State WMA, the crew had to get across the creek by walking over a fallen log. In the end the dangerous crossing results plus another long drive out to the far reaches of the county, got us these additional records.

- Taiga bluet (*Coenagrion resolutum*)
 - Familiar bluet (*Enallagma civile*)
 - Twelve-spotted skimmer (*Libellula pulchella*)
 - Common whitetail (*Plathemis Lydia*)
- Plus 2 nymphs that would be county records:
- Shadow darner (*Aeshna umbrosa*)
 - Fawn darner (*Boyeria vinosa*)



The second survey that weekend was at Long Lake Conservation Center and was covered by the local newspaper from Aitkins resulting in some great publicity for MDS. In case you missed it: check out the link: http://www.messagemedia.co/aitkin/outdoors/dowsing-for-dragonflies/article_33b06a70-6be7-11e7-b2f0-239a69f42087.html

