Newsletter of the Wisconsin Dragonfly Society

Wisconsin Odonata News

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Inside this Issue:

Fostering the appreciation, study and enjoyment of Wisconsin's dragonflies and damselflies and the aquatic habitats on which they depend.




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Cover photo: Kennedy's Emerald *(Somatochlora kennedyi),* by Freda van den Broek, while on the UWM Field Station trail with Kate Redmond in Ozaukee County, June 2014.

Looking Back and Looking Forward

Bob DuBois, Founding Member of the WDS

During the mid-1990s, Bill Smith and several other colleagues and I were busily surveying for dragonflies and damselflies throughout the state, in addition to our other duties, and realized we needed help. It was an awfully big state and there were an awful lot of aquatic habitats. We began trying to recruit citizen volunteer monitors (the term used then), but with only a little success at first. Field guides to odonates were in their infancy, making it hard and time consuming to get folks up to speed with identifications. I began giving talks at nature centers, educational institutions - wherever I could get an audience - and leading field trips too, all for the purpose of recruiting helpers for our Odonata Atlas project as we called it then. But I quickly realized that I was onto something much larger than just recruitment. People were really enjoying hearing new and fascinating things about dragonflies, and I was enjoying watching their faces light up when I talked about them. Even if people didn't agree to help us (and most didn't), it seemed like lives were being influenced in a positive direction. Dragonflies were teaching me that they represented a marvelous gateway to nature appreciation.

In 2002 we rolled out the Wisconsin Odonata Survey website and began having a bit more success recruiting volunteer monitors. Field guides to dragonflies and damselflies were improving throughout the early and mid-2000s and point-and-shoot digital cameras with macro capabilities were getting better with each passing year. These advances made it easier for people to develop identification skills and report their findings. But it was hard to retain volunteers and we lacked a compelling entry point for beginners to get involved with the project. The problem wasn't with the dragonflies; they were more than interesting enough to rival birds and butterflies for the attention of nature enthusiasts.

The problem was that our outreaches and activities were inconsistently held, loosely organized, and inadequately advertised. We lacked the online presence and the organizational structure to produce an outreach that would hold people's attention. This reality was frustrating for me because more and more I was seeing the potential for bringing the magic of dragonflies to people from all walks of life. Maybe a society could help by being a vehicle for providing a newsletter and educational tools, organizing events, and taking advantage of the growing suite of social media opportunities?

Bob (right) keys out a damselfly for a group of class participants at the Forest Beach Migratory Preserve, Ozaukee County.

A few years ago when several of us began tossing around the idea of starting a Wisconsin Dragonfly Society in earnest, we had a few ideas we thought would be good, and I for one, was getting filled with a lot of excitement. Success, I knew, would hinge on many other people "catching the vision" and getting on board. We began the society in 2012 and quickly began adding pieces. We were very fortunate to be able to enlist an excellent group of officers and directors without whom this society would have had no chance of success. I can't thank them enough! We began a gradual upgrade of the WOS website, which is still in progress (many thanks to webmaster Jill Rosenberg and Andrew Badje for organizing data entry). We started putting out a fine newsletter (thanks to Ellen Dettwiler and now Freda van den Broek). The Facebook groups page has been a joy beyond expressing, allowing so many people learn, share, and meet like-minded folks in a supportive, non-threatening forum (thanks to Paul Sparks for helping create and manage the page).

Our outreach efforts to reach inner-city youth through the Urban Ecology Center in Milwaukee is another vital area of service for our group (thanks to Joanne Kline with help from many others in spear-heading this outreach). Like any small group in a start-up phase, we have lots of room to grow, but I think we've built a solid base for that growth. As our society grows I hope we will have more educational outreaches, especially for youth and the minorities that most nature organizers have typically overlooked.

I hope we can take increasing advantage of social media. I hope we can keep building on those things that we're already doing that are working well.

The Wisconsin Dragonfly Society is in very good hands with a fine group of officers and directors as we look to the future. I have great confidence that Dan Jackson (President) and Ryan Chrouser (President-elect) will each do a great job leading this society.

I plan to stay on the board and will continue to help however I can, but without getting in the way. My term as President has been one of pure joy because I've had such a marvelous group of dedicated people to work with. Your officers and directors share my passion and vision: to bring the wonder of dragonflies to as many of the people of Wisconsin as we can. That's a pretty easy job for us in reality, because we have such fascinating subjects to promote! The dragonflies will do the real work of growing the society and providing a unique gateway to nature appreciation.

All we have to do is point a finger and say "Look!" - and remember to get out of the way.

Enjoy!

Bob

Bob waits patiently for the right moment to net an Eastern Amberwing *(Perithemis tenera)*, Waubedonia Park, Oz.

Success, a female Eastern Amberwing!

"Bring on the Damsels and Dragons!"

Dan Jackson, WDS President

It is hard to believe that it is April and that the beginning of the 2015 flight season has almost arrived! For me, that makes this an exciting time – one that I have been impatiently looking forward to for the last five months. Bring on the damsels and dragons!

The fact that it is April also means that I am writing my first newsletter article as the President of the Wisconsin Dragonfly Society. That gives me mixed feelings. I am happy and proud that this role has been given to me and also more than a little apprehensive. After all, I am taking over from Bob DuBois who was far more than the first president of this organization. He is also its founder. The Wisconsin Dragonfly Society exists thanks to Bob. He came up with the idea and then made it happen! That was quite an accomplishment and we all need to thank him getting this organization started!

One of the principle goals of this organization is to generate more interest in Odonata. People work hard to protect what they love and get excited about. Therefore, it is crucial that we share our excitement for Wisconsin's Damsels and Dragons with as many people as possible.

As an organization and as individuals we can accomplish this in many ways. First and foremost, we can share our excitement and knowledge with anyone who shows an interest. When I am out surveying, I take advantage of any opportunity to share the fun. If a family comes by, I will often catch a dragonfly and show it to them. I also have them hold it and let it go. Touch is important and having a living dragonfly in your hand can be a life-changing experience.

Another great way to reach out is through programs and field trips. Historically, Bob was a lone crusader in that arena in Wisconsin. Now, a few more of us have joined the fun and are giving presentations and leading field trips. When you are ready, please join us!

It is a lot of fun to watch kids young and old catch their first dragonfly or damselfly! For those who are just starting, check out the list of events that is included in this newsletter. There might be an event close to you. Be careful though, it is easy to get hooked on dragonflies!

Our annual meeting event is another great way to for us to reach out and to get people involved. This year, we plan to meet in Door County on the weekend of July 11-12. The actual annual meeting will be held at The Ridges Sanctuary in Bailey's Harbor and it will be followed with field trips to many interesting locations in that area.

The Ridges is a special venue for the event since that sanctuary is home to a thriving population of the federally endangered Hine's Emerald. We will be there during the flight season for that species and it will be a great opportunity to see one of the rarest dragonflies in the United States!!

Whether you are a professional or simply someone excited about damsels and dragons, I hope that you all have a fun and successful year. When you are out and about, please take the opportunity to share your excitement with others. That is what it is really all about….

The speakers at the Dragonflies and Damselflies Symposium, part of the Wisconsin Wetlands Association Annual Conference that was held in Madison earlier this year, were (from the left) Dan Jackson, Jennifer Callaghan, Marla Garrison, Bob DuBois and Ken Tennessen.

May

5/6 Dare To Dance With Dragonflies (Dan Jackson) – 7:00 PM, EnviroWednesdays@Myrick by WisCorps, Myrick Park Center, Myrick Park, La Crosse. If weather and bugs cooperate, we will start with a short walk.

5/16 Damsels and Dragons of Wisconsin and Minnesota (Dan Jackson) – 4:00 PM, Driftless Area Wetlands Centre – Marquette, IA. In Cooperation with McGregor District of the Upper Mississippi National Wildlife Refuge. (http://www.driftlessareawetlandcentre.com/)

5/17 Identification of Odonata Nymphs (workshop by Bob DuBois) at the Society of Freshwater Science Annual Meeting, Wisconsin Center, Milwaukee (http://sfsannualmeeting.org). Cost is $130 for SFS members; WDS members may get a discount.

5/20 Dragonflies and Damselflies of Wisconsin (Bob DuBois), free evening - 7:00 PM, presentation open to the public for the Aldo Leopold Audubon Society in Stevens Point (http://www.aldoleopoldaudubon.org).

5/26 Damsels and Dragons of Wisconsin and Minnesota (Dan Jackson) – 7:00 PM, Cascade Meadow, Zumbro Valley Audubon, Rochester, MN. http://www.cascademeadow.org/

June

6/25 Damsels and Dragons (Dan Jackson), 6:00 PM (tentative), Observation Deck, Trempealeau National Wildlife Refuge. Discussion about dragonflies and damselflies. This will include looking at live adults and nymphs and may include some netting if weather permits. Watch the Wisconsin Dragonfly Society Facebook page for further details. (http://www.fws.gov/refuge/trempealeau/)

6/27 Dragonflies and Damselflies of Wisconsin (Ryan Chrouser), 9:30 AM, Beaver Creek Reserve, Eau Claire County. Ryan Chrouser will give a presentation on dragonflies and damselflies. Watch Facebook for time and details. (http://www.beavercreekreserve.org/)

July

7/11 – 12 Wisconsin Dragonfly Society Annual Meeting and Field Trips, The Ridges Sanctuary, Bailey's Harbor. Annual meeting at 9:00 AM on Saturday, July 11. The schedule is still being developed but the meeting will be followed by a short presentation. When that is done, it will be followed with field trips at The Ridges and other area locations. Sunday field trips will also be scheduled. (http://www.ridgessanctuary.org/)

7/14 Odonata Field Trip (Bob DuBois), Pope Lake State Natural Area (near Waupaca). Bob DuBois will lead a field trip in search of Odonata. (Contact event organizer Phil Peterson for where and when to meet [pnpeterson111@gmail.com; 414-238-5327]) (http://dnr.wi.gov/topic/Lands/naturalareas/index.asp?SNA=194)

7/18 Dragonflies and Damselflies of Wisconsin (Ryan Chrouser), 1:00 PM, Fred Smith Concrete Park, Phillips, WI. Ryan Chrouser will give a presentation on dragonflies and damselflies. Watch Facebook for time and details. (http://www.friendsoffredsmith.org/)

7/25 Odonata Field Trip (Dan Jackson), La Crosse District Visitor Center, Upper Mississippi Fish & Wildlife Refuge, Onalaska, WI. Dan Jackson will lead a field trip on the visitor center grounds in search of Damsels and Dragons. Watch Facebook group for more details and to confirm the date and time! (http://www.fws.gov/refuge/UpperMississippiRiver/LaCrosseDistrict.html)

September

9/19 – 20 Nymph Identification Workshop (Bob DuBois), Eastman Nature Center, Elm Creek Park Reserve, Osseo, MN, sponsored by the Minnesota Dragonfly Society ($20.00; more info at http://www.mndragonfly.org).

Hine's Emerald juvenile female – photo by Paul Sparks

Annual Meeting at The Ridges Sanctuary, Door County, July 11th – 12th

One of the highlights of the annual gathering will be the opportunity to learn more about the rare Hine's Emerald dragonfly!

Aside from its sheer beauty and fascinating life cycle, the Hine's Emerald has the distinction of being the only North American odonate on the Endangered Species list. Its official status is State and Federally Endangered, meaning that it is considered to be in danger of becoming extinct. It is also considered to be globally rare as the only documented populations worldwide are in Wisconsin, Illinois, Michigan and Missouri. It has become extinct in Alabama, Indiana and Ohio. The largest known breeding population is currently in Door County, in the protected environment of The Ridges Sanctuary.

The Hine's Emerald is a member of the Emerald family, the Corduliidae. Within this larger family it belongs to the genus Somatochlora, the Striped Emeralds. With a body length of 2.3 to 2.5 inches and a wingspan of up to 3.5 inches, the Hine's Emerald is the largest of the twelve members of this genus in Wisconsin!

Join us at the **Annual Meeting on July 11th and 12th** to learn more about the interesting life cycle of the Hine's, its distinguishing characteristics and unique habitat requirements; and how it differs from some of the other members of the Emerald family that we may also get to see during this time!

For further information on the Hine's Emerald, visit the Wisconsin Odonata Survey website at
http://wiatri.net/inventory/odonata/SpeciesAccounts/SpeciesDetail.cfm?TaxaID=78
Also see the US Fish and Wildlife Service website http://www.fws.gov/midwest/endangered/insects/hed/hins_fct.html

Hine's Emerald *(Somatochlora hineana)* males – photos by Dan Jackson

Kate Redmond, also known as ***The BugLady*** has been writing a **Bug o'the Week**, every week, for the last eight years. A wealth of these informative and entertaining articles about various insects, including many of our dragonflies and damselflies can be accessed via the UWM Field Station's website. Visit the archives to enjoy more of the The *BugLady's* delightful sense of humor and her stunning photographs. We thank *The BugLady* for permission to reprint this article.

Bug o' the Week - Big Emerald, Little Emerald

Salutations, BugFans,

There is no insect-viewing experience quite like walking down a path with the sun at your back and encountering an emerald dragonfly going the other way. The light catches those brilliant eyes and you are stopped in your tracks.

The emeralds (family Corduliidae) are an interesting bunch. They're a large and varied family (about 50 members in North America) that includes the boghaunters, emeralds, baskettails, and shadowdragons and that counts seven "most wanted" and one Federally endangered species (the Hine's Emerald) among its members in Wisconsin (http://wiatri.net/inventory/odonata/). Corduliids are found worldwide, and as a group, they occupy lots of northern and high-altitude habitats.

Most Corduliids are dark with long, slender abdomens, metallic iridescence, a somewhat hairy thorax (good for warming up in those northern climes), and those big, green eyes that meet at the top of the head. Most have a thin, pale band around the abdomen where the second and third segments meet. The BugLady keeps reading that it's hard to tell emeralds, both adults and naiads, from the libellulids (skimmers) and maybe they should be reclassified with them.

The adults can be seen (or not) perching vertically on branches or leaves. They are "cruisers," strong fliers that patrol tirelessly at the edge of woods and wetlands; and they often form feeding swarms as high as 30 feet off the ground at the tail end of the day.

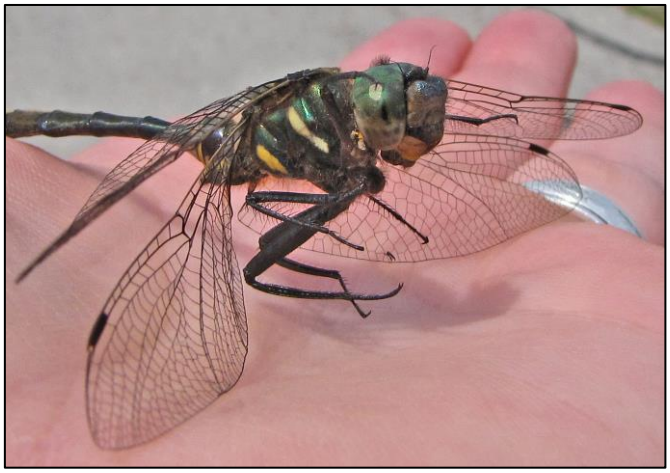
Photo top right - Kennedy's Emerald *(Somatochlora kennedyi)* by Kate Redmond

Female Corduliids lay eggs on the outsides of aquatic plants (they don't have the kind of ovipositor that allow them to excavate) or in water or mud, unattended by the male. The dark, hairy naiads are classed as "sprawlers," mostly sedentary critters that camouflage themselves beneath vegetation/debris and ambush their food (fellow aquatic invertebrates) as it walks/swims past. Naiads are found in a variety of wetland types – swampy, boggy, flowing, and/or cold. http://bugguide.net/node/view/674033/bgimage

Until 2014, the BugLady's experience with the big emeralds was limited to finding a road-killed Hine's Emerald http://www4.uwm.edu/fieldstation/naturalhistory/bugoftheweek/hines_emerald.cfm), but last summer, this extraordinary **KENNEDY'S EMERALD** (*Somatochlora kennedyi*) allowed her to walk (slowly) around it,

Shooting and changing lenses and muttering, and another *Somatochlora* (possibly *williamsoni*) flew around her in fall as she tried to un-jam her camera.

The *Somatochlora* species (26 in North America) are called the Striped Emeralds (though the KE's pale-to-partially-absent or obscure side stripes are diagnostic for the species; see the distinct stripes on the Hine's Emerald for comparison).



Hine's Emerald *(Somatochlora hineana)*

KEs like peatlands, and they range far to the north, in fact, one species breeds in the tundra north of the Arctic Circle. *Somatochlora* is loosely divided into four groups, based on the shape of the male's cerci, and the KE is in the "*forcipata* group" http://bugguide.net/node/view/264576/bgimage . The folks at the Wisconsin Odonata Survey say about the genus that "*Most species are uncommonly seen, but this may be largely due to their secretive nature. When flying, most species look alike which is why in-hand identifications of their anatomical features are often needed*."

According to Kurt Mead in Dragonflies of the North Woods, KEs are found along "*slow streams through open areas. Also cold bog ponds*." They also favor swamps, sedge fens and mossy pools. They are not very common in Wisconsin, but they can be found from Alaska to Labrador. Male KEs patrol two or three feet off the ground in the shade along the water's edge, stopping, hovering, pivoting, and occasionally perching briefly in the vegetation. Females lay eggs while flying slowly, about two inches above the surface, tapping the tip of their abdomen into the water.

The (approximately) two-inch-long KE is not particularly gregarious and is often crepuscular – flying at dawn and dusk in feeding swarms, often far from water. It's seen from mid-May through mid-July (this one was photographed in mid-June); some similar-looking striped emeralds have later flight periods.

Members of the genus *Dorocordulia* are called the Little Emeralds; there are two species in the genus, and both are North American. A lot of what has been said about the *Somatachlora* emeralds – metallic, black legs, occupying northern cedar swamps-bogs-lakes-ponds, ovipositing by tapping the open water or clumps of aquatic plants in flight – can be said of the Little Emeralds, but their range lies more eastward, around the Western Great Lakes to Delaware to Nova Scotia. They prefer still water. Their faces are green.

Hine's Emerald *(Somatochlora hineana)*

In A Manual of the Dragonflies of North America, J. G. Needham says that the **RACKET-TAILED EMERALD** (*Dorocordulia libera*) is "*Common about borders of small, upland lakes where it flies in midsummer during sunshine, gaily in and out of little bays and over shallows. Nymphs inhabit edges of water, commonly under overhanging turf and clamber up projecting roots and stumps to transform*." It's fairly common throughout much of the Wisconsin.

Needham goes on to describe the 1 ½ inch RTEs as "*A charming little bronzy-green species….. Elegant little dragonflies, with hairy thoraxes and smooth, shiny green abdomens. The thorax is green, densely clothed in the front with tawny hairs, darkened in the depths of the sutures and paler beneath.*" The tip of the abdomen, which has been compared to a tennis racket (and hence the name) is reminiscent of the (unrelated) clubtails.

Dunkle, in Dragonflies through Binoculars (a popular and comprehensive book that the BugLady can't warm up to because its pictures are *so* tiny) says that the male RTE "*patrols with its abdomen slightly arched and tipped upward*," and that it may bask flat on a leaf. He paints the lovely picture of patrolling males occasionally perching on pitcher plant flowers (which the BugLady would pay to see).

RTEs are not as committed to guarding permanent territories, but they may dart and turn as they patrol small areas temporarily. The BugLady sees RTEs frequently, flying along one of her favorite, wooded wetland paths, but although they land more often than most emeralds do, she can rarely track them. She has read that they may accompany people on their walks, attracted to the insects that are attracted to the people.

Waiting for dragonfly weather,

The BugLady

Left: Racket-tailed Emerald *(Dorocordulia libera)* female
Top: Racket-tailed Emerald *(Dorocordulia libera)* juvenile

Photos by Kate Redmond

As *the BugLady*, Kate Redmond's mission statement is "Less stepping on bugs." She hopes that people will be wowed by the beauty and intricacy of bugs. She's happiest when she's taking pictures, preferably in a wetland.

See the **Bug o'the Week** archives at: http://www4.uwm.edu/fieldstation/naturalhistory/bugoftheweek/

Considerations for the Planning of Regional Meetings

Ryan Chrouser, WDS Vice-President

The annual Wisconsin Dragonfly Society meeting is a great opportunity to learn some new things, meet some new people, and see some new species of odonates. These events have really inspired me to seek out a variety of new habitats in the vicinity of my home. The identification tips I have learned have proven invaluable in the field. The unfortunate thing is that the main event is only once a year, and if you happen to be tied up for that weekend you might miss this opportunity.

At our 2014 meeting, we discussed the possibility of holding some smaller informal regional WDS field trips. The idea was to allow some folks who may not be able to make the annual meeting to still feel connected to the WDS at large. My wife and I decided to trial this in west central Wisconsin to see how it might work. In planning the event, we had discussions about what needed to be considered, to accommodate as many people as possible. We thought it may be helpful to share these considerations.

- Is there a county nearby that hasn't had much surveying? The Wisconsin Odonata Survey (WOS) website is really helpful in this regard. It allows you to look at species lists for each county, so you can determine if a county could use some attention. http://wiatri.net/inventory/odonata/Checklist/
- Is there a habitat type in a certain area that hasn't been explored?
- Which species would we really like to see, and what habitats would we need to look for those particular species?
- Are the identified habitats or survey areas publicly accessible?

For the purpose of our regional field trip, we also wanted to pick a location that our local odonate enthusiasts would really be interested in. It just so happened that on the Pierce and St. Croix county border is the lovely community of Spring Valley. This town was an ideal choice for us as it is near the homes of several of our region's enthusiasts, and neither county has had a great deal of surveying. It also had some public areas on a lake that we could easily access.

After we had that all ironed out, we contacted some other regional folks to let them know what our plan was. In the end we had nine people come along on the field trip. We found a few species that some of the attendees hadn't seen before, we practiced damselfly ID, and even found a few county records. This was all done in spite of some adverse weather that included some scattered showers.

I felt the field trip was a huge success. I really enjoyed getting to know some of my neighbors a little better, and sharing what I could about odonates with them. We plan to organize another regional meeting this year for our local group. After we have the plans finalized, we will get the word out to the WDS at large, so any other interested parties can come to our neck of the woods to join us.

We hope that some others out there might like this idea and arrange a regional gathering of their own. It provides a great opportunity to connect with people and nature.

Focus on Habitat

Part I: Bogs

Bob DuBois

Bogs are a type of peatland that receive water only from precipitation and from run-off from surrounding areas. Other types of peatlands also have groundwater inputs; those are called fens. There are some characteristic species of dragonflies and damselflies that are found in bogs, while others are found in fens, and some are found in both. If a bog has a bog pond in the middle, then there will be a whole bunch of additional species breeding in the pond. And sometimes the dividing line between bogs and fens can get blurry.

But before we let our heads get spinning too much, let's start out by focusing on just plain old bogs. There is a very cool bog some colleagues and I have studied called the Empire Bog that is located in rural Douglas County in the Empire Wilderness Area. For several years we marked the emergence sites of all the dragonfly species that were breeding in the bog. This bog will be a great focal point for talking about bog odonates.

Aerial view of Empire Bog with dots indicating areas where exviae were found.

Interestingly, virtually all of the odonate breeding we saw in this bog was occurring in the slightly wetter moat (or lagg) surrounding the bog. Bogs like this are often drier in the middle because the build-up of peat there exceeds its decomposition, whereas the moat areas on the outside that receive nutrient-rich run-off water from surrounding areas have greater rates of peat decomposition and therefore more room for water.

Empire Bog Photo by Bob DuBois

Here is the list of species that were breeding in the bog in rough order of their abundance:

Sedge Sprite (*Nehalennia irene*)

Ebony Boghaunter (*Williamsonia fletcheri*)

Hudsonian Whiteface (*Leucorrhinia hudsonica*)

White-faced Meadowhawk (*Sympetrum obtrusum*)

Kennedy's Emerald (*Somatochlora kennedyi*)

Delicate Emerald (*Somatochlora franklini*)

Four-spotted Skimmer (*Libellula quadrimaculata*)

Green-striped Darner (*Aeshna verticalis*)

Each of these species belongs to groups that have other similar species that can also thrive in boggy environments. For example, the much rarer Sphagnum Sprite (*N. gracilis*) is also found in bogs. The Ebony Boghaunter has a much rarer sibling species the Ringed Boghaunter (*W. lintneri*) that is found in bogs and fens in central Wisconsin. Although the Hudsonian Whiteface is the main bog species in its genus, most of our other Whiteface species (at least three of them) are common in bog ponds.

Many of the other species of Meadowhawks are also found in boggy habitats if there is a pond present or at least a little more standing water.

The Striped Emeralds (genus *Somatochlora*) are famous and interesting bog dwellers. Although we found only two species of them in this bog, several other species including the Forcipate Emerald (*S. forcipata*) and Incurvate Emerald (*S. incurvata*) are worth watching for in bogs!

The King Skimmers (genus *Libellula*) are mostly pond species, but the Four-spotted Skimmer is often able to find enough water in the deeper moat areas of bogs to eke out an existence.

Most of the Mosiac Darners (genus *Aeshna*) also require more standing water than is usually found in bogs, but the Green-striped Darner, Canada Darner (*A. canadensis*), and the very rare Zig-zag Darner (*A. sitchensis*) can all be found in bogs. The Subarctic Darner (*A. subarctica*) is a rare denizen of northern bog ponds.

RInged Boghaunter male *(Williamsonia lintneri)*

RInged Boghaunter female *(Williamsonia lintneri)*

Ebony Boghaunters *(Williamsonia fletcheri)*

Ebony and Ringed Boghaunter photos by Ken Tennessen

Are *Williamsonia* Nymphs Dead Leaf Mimics?

Ken Tennessen and Marla Garrison

At last summer's DSA meeting in northern Wisconsin, we ventured into a rather large, remote and unnamed Sawyer County fen that Bob DuBois dubbed Ken's Fen. We waded across a fairly deep moat-like edge and then with small dip-nets started looking for nymphs in the Sphagnum pools. We turned up more plant material than nymphs, of course, lots of decaying fragments, especially pieces of Sphagnum and dark leaves of Leatherleaf, *Chamaedaphne calyculata* (L.) that had fallen into the water. But we did find some nymphs of *Williamsonia fletcheri*, (Ebony Boghaunter); mostly small ones and one full-grown (not quite 1.5 cm long).

It didn't take us long to notice that the little "Willy" nymphs looked a lot like the dead leaves of the Leatherleaf!

In fact, when we put the full-grown nymph on a leaf, just for the heck of it, we could hardly see it! The colors of the two blended together marvelously[1] and their size and shape were effectually mirror images of one another. Well, leaves don't have legs, or antennae, but those appendages were not all that conspicuous because the nymph tucked its legs in. The end of the nymph abdomen, in particular, is shaped remarkably like the distal end of a leaf. So why the similarity?

One seemingly obvious explanation is that looking like a dead leaf would help nymphs hide from predators and also from their prey.

We did find Central Mudminnows and a few *Aeshna* nymphs in the Sphagnum pools where we found the Willys, and there must be frogs and salamanders present here also. All these are potential predators of dragonfly nymphs. The Willy nymphs don't move much when disturbed – they are inconspicuous and rather difficult to spot, even in a dip-net.

Photo by Denny Johnson

It appears that for a Willy, it's good to stay still and be thought a leaf. So, their strategy (in non-anthropogenic sense of course) is to blend in, be conservative, and wait for the occasional snack (i.e. mosquito larva) to drift by. If they are dead-leaf mimics, it would be a new example of masquerade mimicry, a field of study which has received little attention from mimicry biologists.

[1]The brown color of the nymph in the illustration was much darker in life, but has lightened somewhat after being preserved.

Odonate Monitoring at the Urban Ecology Center, Milwaukee

Jennifer Callaghan

What a great season! 2014 marked the second year of odonate monitoring at Milwaukee's Urban Ecology Center. We increased our volunteer base, conducted surveys in more areas and increased our species list from 2013! Of our 20-something monitoring and research citizen science projects the Urban Ecology Center runs during the summer, our odonate surveys proved to be one of the most popular programs!

Highlights of the season included adding 3 young families to our odonate monitoring family. They were enthusiastic and engaged and a lot of fun to have in attendance. It was surprising to see how much they truly loved chasing odes around. Another highlight was having a Wisconsin Lutheran College drawing class attend a late-summer survey. It was fascinating seeing how differently artists look at odonates. The group was completely enthralled with a pair of Green Darners and spent a half hour sketching and photographing the pair. None of the group had ever captured dragonflies before, yet that didn't seem to stop them from running straight up a hill and swiping two darners in mid-air!

Our second season was defined by growth. Our surveys grew to include all 3 branches of the Urban Ecology Center. They were rotated weekly so that our Riverside Park, Washington Park and Menomonee Valley locations were all surveyed at least once per month.
We conducted 4 surveys at Menomonee Valley, and 5 a piece at Washington and Riverside Park. We ended the season with a total volunteer list of 63 participants! 21 of those 63 attended 2 or more surveys. This was a great improvement from 2013 where we had 22 volunteers and only 2 repeat customers.

Our skills improved noticeably too. And as our skills improved, so too did our species list! Both our Washington Park and Menomonee Valley branches ended the season with 13 identified species. Our species list in Riverside Park grew from 16 to 21. All together our branches identified a total of 27 odonate species! Not too shabby for three very different urban environments.

Of most significance, was watching the confidence of several volunteers build. By the end of the season there were a handful of people whose skills had improved so much that they were able to conduct surveys in other locations on their own and identify many of the species.

Photos courtesy of Jenn Callaghan

They also sought out other educational opportunities and attended the UWM Feld Station class on Dragonflies and Damselflies taught by Bob DuBois. Their interest increased even more after the workshop and it will be interesting to see if that enthusiasm continues into another season.

In 2015, the Urban Ecology Center plans to monitor weekly again rotating at all 3 branches. Contact Jennifer Callaghan jcallaghan@urbanecologycenter.org with interest. We are seeking skilled odonate-ors to help with quicker in-field identification, but odonate enthusiasts of all levels are welcome. We look forward to another fun season of ode hunting and hope you can stop by!

Ovo-vivi-What?

Freda van den Broek

An article in the **International Journal of Odonatology** (2014 Vol. 17, No. 4), published by the Worldwide Dragonfly Association, examines the possibility of a unique case of ovo-viviparity in an Asian damselfly *Helicocypha perforata*. If this is verified through further observation and research, it will be the first documented case of ovo-viviparity in Odonata.

Perhaps, as was my first reaction, you may be thinking "ovo-vivi-what?" Since this article was handed to me by our esteemed odonatologist, author, poet and artist, Ken Tennessen, I decided to challenge my "unpronounceable word block" and read further: being an odonate enthusiast does not always equate to having any scientific or entomological training!

The norm in most insects, including dragonflies and damselflies (odonates) is oviparity, which means that they reproduce by laying eggs. These eggs hatch after a period of days or weeks and the 'hatchlings', or larvae, undergo various stages of development.

In odonates the larva (also referred to as the nymph or naiad) goes through several molts or ecdyses before the larva (nymph/naiad) emerges as a fully-fledged adult.

A few highly specialized insects are known to be live-bearing.

With ovo-viviparity, rather than giving birth to a living embryo, the female releases an egg that ecloses (hatches to the very next level of development) either immediately upon oviposition or shortly before that!

A researcher in China observed and filmed the female damselfly *Helicocypha perforata* ovipositing a prolarva (the first larval form that hatches from the egg) into a shallow line of water in a partially submerged branch in a small stream. Careful study of the video footage and consultation with various experts gave rise to the publication of the article entitled "**Ovo-viviparity in Odonata? The case of *Helicocypha perforata* (Zygoptera: Chlorocyphidae)"** by H. G. Salindra K. Dayananda and Roger L. Kitching.

Stay tuned to the next edition of the **Wisconsin Odonata News** in the fall for further news from the frontiers of odonatological research!

Hands-on Learning

With the idea of bringing odonate research into the more familiar realm of your own home, classroom, or nature center for that matter, Ken and Bob have devised a series of science projects for those with inquiring minds and a passion for odonates.

The first project in the series is outlined below. The Wisconsin Dragonfly Society Facebook Group page may be used as a forum for asking questions about the project and for sharing your progress, pictures and findings! Questions and concerns may be addressed by our group experts or anyone who cares to share their knowledge and experience. We hope that you will join us for some hands-on learning fun!

Raising *Anax junius* Nymphs on Different Backgrounds

Ken Tennessen and Bob DuBois

Ever wonder why some nymphs of *Anax junius* (Common Green Darner) are green, while some are brown, yet others are black? While it seems likely that nymphs adapt their color to match background colors, and thus gain camouflage, there appears to be no experimental evidence for this phenomenon. How about finding out for yourself? Green Darner nymphs are easy to find and then raise in captivity. Just go to a pond or lake where you know they fly, and in June or July, take a dip net and collect some nymphs. It would be good to get 15 same-sized nymphs; young banded ones less than half an inch long, as in the figure below. Keep the nymphs separated from each other from the moment you collect them by putting them in individual plastic containers, with some plant material and very little water.

When you get home, fill the containers with pond water and set up 3 treatments, 5 nymphs per treatment:

1. all tan background
2. all green background
3. all black background

Mark the containers and randomize them; keep them in natural day-length and rotate the containers every day in order to prevent localized light/temperature conditions. Provide a support in each container (they need to cling) that is the same color as the background; you might be able to find cattail stems of all 3 colors for this purpose. Place a cover with small holes (for air exchange) over each container. Every day, feed them small aquatic insects, like mosquito or chironomid (midge) larvae. If you can't get aquatic insects, you can feed them small earthworms, or you can order black worms (Lumbriculidae) from Carolina Biological Supply. It would be a good idea to exchange their water every 2 or 3 days (keep a supply of fresh pond water handy).

Check the containers daily for molting. After 4 or 5 molts, see what color the nymphs are. Take some pictures. You should have an answer as to how important the different background colors are in about 3 weeks or so.

Young nymph of *Anax junius* Photo by Ken Tennessen

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ARGIA

Argia – The News Journal of the Dragonfly Society of the Americas

Celeste A. Searles Mazzacano, Editor in Chief, celeste@xerces.org

Month after month, you eagerly await the next Wisconsin Dragonfly Society newsletter…you devour it from start to finish…and all too soon you reach the end and wonder despairingly "How can I make it through until the next issue?????" If this is you, despair no more, because you can feed your need for more information, news, spectacular photos, and fascinating facts about all your favorite odonates with Argia, the news journal of the Dragonfly Society of the Americas (DSA). DSA, which was organized in 1988 and incorporated as a non-profit organization in 2002, exists to advance the discovery, conservation, and knowledge of Odonata through observation, collection, research, publication, and education. Membership in DSA is just $15, and with that fee not only do you receive access to the digital version of Argia, published in all its full-color glory four times per year, you also support OdonataCentral (www.odonatacentral.org), a massive collection of New World dragonfly and damselfly records. Each new photo record (which can be submitted by any registered OC user) is vetted by an expert to confirm identification, making OC a unique source of data on geographic distribution of species as well as providing an impressive (and highly useful) photo gallery.

One of the hallmarks of DSA is its friendly and eclectic community of scientists, odonate experts, knowledgeable amateurs, and complete newcomers to the world of dragonflies. This mixture is reflected in the pages of Argia, which, while not a peer-reviewed journal, is a terrific learning tool. Within it you can find reports from scientists addressing everything from species' reproduction, habitat, and dispersal, to the finer points of *Sympetrum* (Meadowhawk) hybrids; details of the mouthparts of nymphs; range extensions and unexpected behaviors; results of long-term studies of emergence or species diversity in a habitat; and a list of the latest publications in the world of Odonata, including new book reviews. Argia also showcases the lighter side of dragonflying with a tongue-in-cheek advice column, Parting Shots photos of the strange and the silly, essays on adventures at regional and annual meetings, and the confessional How I Fell Into the Clutches of the Odonata. Check it out by visiting OdonataCentral and clicking on the Publications tab at the top of the home page. Access to the most recent three years of Argia is restricted to DSA members, but you can download older issues to get an idea of what the journal has to offer. Anyone can submit material, regardless of level of expertise; you'll find the guidelines on the last page of each issue. I encourage you to read an issue or two—you'll likely see several names that you recognize, experience a few "aha!" moments, and may even be moved to become an Argia-reading DSA member yourself.

Published by the Dragonfly Society of the Americas
http://www.DragonflySocietyAmericas.org/

ARGIA'S TABLE OF CONTENTS

ARGIA Vol. 27, No. 1, 25 March 2015

Front cover: "There was lots of action at last year's annual meeting in Wisconsin. In mid-afternoon of 19 June 2014, on the banks of the Chippewa River at Bruce [Rusk County], making their formal debuts into adult society were dozens of Dragonhunters (*Hagenius brevistylus*). It was a heart-stopping event for a naturalist to witness." Photo by Marion Dobbs.

MEMBERSHIP MATTERS

Membership in the Dragonfly Society of the Americas (DSA)

Membership in the DSA is open to any person in any country and includes a subscription to ARGIA. Dues for individuals in the US, Canada or Latin America are $20 US for regular membership and $25 US for institutions or contributing membership, payable annually on or before 1 March of membership year. Dues for members in the Old World are $30 US. Dues for all who choose to receive Argia in PDF form are $15. The Bulletin of American Odonatology is available by a separate subscription at $20 US for North Americans and $25 US for non-North Americans and institutions. Membership dues and BAO subscription fees should be mailed to Jerrel Daigle, 2067 Little River Lane, Tallahassee, FL, USA 32311. More information on joining DSA and subscribing to BAO may be found at www.dragonflysocietyamericas.org/join

Wisconsin Dragonfly Society (WDS) Membership Application

Membership in the WDS is open to any person in any state.

The WDS dues are as follows: $5 annual single member; $7.50 for family membership.
WDS costs are minimal; members must opt-in before WDS will share their e-mail address or other contact information with other members of WDS.

Send check or money order to:

Matt Berg

572 N. Day Rd

St Croix Falls, WI 54024

Name _____

Address _____

City, State, Postal Code _____

E-mail _____ Share? _____

Check membership category that applies:

Single Member $5.00 ☐ Family Membership $7.50 ☐

Total enclosed $ _____

RESOURCES

Links

http://wiatri.net/inventory/odonata/WDS/Images/WDS_ConstitutionBylaws.pdf
Wisconsin Dragonfly Society constitution and by-laws

http://wiatri.net/inventory/odonata/WDS/Images/WDS_Brochure.pdf
Printable brochure of the WDS

http://wiatri.net/inventory/Odonata/ Resource for citizen participation

http://wiatri.net/inventory/Odonata/Resources.cfm List of resources from Bob DuBois

http://www.facebook.com/groups/wisconsindragonflysociety/ - our group on Facebook - it's a joy to see these contributions from many people and our members helping them identify their odes.

www.facebook.com/WisconsinDragonflySociety/photos stream - our Facebook page photos. You can go to this link even if you are not a Facebook member.

http://bryanpfeiffer.com/2013/12/31/the-year-in-flight/#gallery/4056/264/0 Bryan Pfeiffer is a blogger who enjoys dragonflies as well as birds. This slide show has several beautiful pictures of odonates. "Follow" him and you'll get lots of good reporting on the habits of the Odonata.

http://bryanpfeiffer.com/2014/01/09/surviving-the-polar-vortex/ - an amazing story of the early collecting of Philip Powell Calvert in Costa Rica.

http://bryanpfeiffer.com/ - the home page of Bryan Pfeiffer's website – many great photos here and news of GLOM, etc.

http://www.odonatacentral.org/ - OdonataCentral hosts the official website of the Dragonfly Society of the Americas. The journals *Argia* and the *Bulletin of American Odonatology* are online and searchable.

Supplies

Nets, vials, pins, etc. can be purchased from BioQuip Products, Inc., website:
http://www.bioquip.com

Collecting envelopes can be acquired on-line from:
http://bellsouthpwp.net/b/i/billmauffray/envlopes.htm

Recommended Guide Books

· Burton, Paul. 2010. ***Common Dragonflies of Northern Door County****:* Stonehill Publishing; Ephraim, Wisconsin. (Available from www.doorcountybooks.com)

· Legler K., D. Legler, and D. Westover. 2013. ***Color Guide to Dragonflies of Wisconsin***: Edition 5.1; Karl Legler, Sauk City, Wisconsin. This new version has been expanded to include all WI species of dragonflies; available from robert.dubois@wisconsin.gov or http://uwarboretum.org/bookstore/

· Lam, Ed. 2004. ***Damselflies of the Northeast*****:** Biodiversity Books; Forest Hill; New York. 96 pp. (Note: very useful for WI, having all but one of our species.) http://www.edlam.net/book.html

· DuBois, R. 2005. ***Damselflies of the North Woods***: Kollath-Stensaas Publishing; Duluth, Minnesota. 128 pp. (Omits several species found only in the southern-most counties - out of print but useful if you can find a copy at a reasonable price.)

· Mead, K. 2009. ***Dragonflies of the Northwoods***: 2nd Edition. Kollath-Stensaas Publishing; Duluth, Minnesota. 193 pp. http://www.dragonfliesofthenorthwoods.com

· Paulson, D. 2012. ***Dragonflies and Damselflies of the East***: Princeton University Press, Princeton, NJ. (This is the most complete reference for eastern North America).

· Garrison, M. 2011. ***Damselflies of Chicagoland: A Photo Field Guide***, version 2, 135 pp. (Free PDF down-load). http://fieldguides.fieldmuseum.org/guides/guide/388

· Rosche, L., J. Semroc, L. Gilbert. 2008. ***Dragonflies and Damselflies of Northeast Ohio***: 2nd Edition. Cleveland Museum of Natural History, Ohio, 300 pp. http://www.ddneo.info

· Tennessen, Ken. 2010. ***Waushara County Dragonflies and Damselflies****:* 32 pp. (Available from the author: tennessen@centurytel.net).




Ode

One who looks for birds
Calls himself a birder
But if one looks for dragonflies,
Or odonates to science guys,
Do they call themselves an Oder?
I think it stinks but might apply

~ Ryan Chrouser

Fellow Oders,

Please remember

To do your part

In preventing the spread of

INVASIVE SPECIES

By keeping your

boots and waders

clean.

Happy Oding in 2015!