



Williamsonia



A Newsletter of the Michigan Odonata Survey

Surveying the Western UP (or Slip-Slidin' for Stylurus)

Stephen Ross

In July, I had the opportunity to do a dragonfly survey in the Upper Peninsula in the Ottawa National Forest for the Forest Service. Mark O'Brien had tipped me off to this opportunity earlier so I took a shot at the contract. Not having ever been farther west than Seney, this seemed like a great opportunity to see the western UP in depth.

I got the job and after ten plus hours of driving (with a few wrong turns thrown in), I arrived at the Forest Service field office in Bessemer where I met my contact, Sean Dunlap. After some preliminary introductions and consultations, Sean handed me a Forest Service map of the forest, report sheets, and said "go find them". "Them" are five species of dragonflies, *Stylurus scudleri*, *Somatochlora elongata*, *Somatochlora forcipata*, *Ophiogomphus anomalus* and *O. howei* that are of concern on the Regional Forester Sensitive Species, Animal list (RFSS, the Forest Service equivalent of the MNFI list). Now the Ottawa National Forest is a big area, comprising most of Gogebic, Ontonagon, Iron, and Houghton Counties and it's a long way between anything and anywhere up there.

So, I set out each morning from my cozy motel in Bessemer and drove about an hour and a half to the farthest points and worked back, lessening the amount of initial travel each morning until my last day was only a few miles drive to the Black River. Each day required covering one or part of the drainage systems of the East, West, South, and Main Branches of the Ontonagon River and the Black, Sturgeon, Paint, and Presque Isle Rivers. Using Legler's Wisconsin dragonfly book and Dunkle's new *Dragonflies Through Binoculars* as a base for

habitats to look for, I criss-crossed many miles of dusty Forest Service roads throughout the forest. Hundreds of streams cross the Forest Service roads and the map was of little or no help as to which were potentially viable dragonfly sites. Many streams appeared to be good dragonfly habitat on paper but turned out to be dry or so overhung with woodland or alder thicket as to be impenetrable by even a *Boyeria vinosa* working the banks.

On the first day along the Paint River, my first species recorded was *Stylogomphus albistylus*, which, according to an earlier *Williamsonia* issue, has only recently been recorded in the UP. Another new species for me was *Argia moesta*. It quickly became clear that wading some of the streams was going to be interesting as, though generally shallow, the streams were quite rocky and covered with a slick of algae that made footing quite tenuous. Other streams had streamers of algae yards long that waved back and forth covering the bottom making for further hazards from covered logs. Good appearing habitat at the roadside could quickly degenerate into alder tickets, soft boot-sucking sand, or become too deep to sensibly wade.

On the Thayer Creek tributary of the Ontonagon River near Kakabeka Falls several *Hylogomphus adelphus* were located. It was not on my target list, but on the NFSS list and a good find when reported. This species was found in several other locations. Here, I also had the extreme good fortune to be standing in the stream channel in a beautiful shaded northern hardwoods forest removing a dragonfly from my net when a wolf crossed the stream about 100 feet from me. It stopped in the stream and looked at me and I back at it for about ten seconds, then it vanished into the woods.

Continuing on with my work over the next several days took me to many beautiful sites, streams, and a myriad of dragonflies. *Boyerias* and *Hagenius* seemed to be in every stream. At one site I actually caught a *Hagenius brevistylus* in whose clutches was a *Macromia illinoensis*, two of the largest dragonflies in our area. Talk about a racket in the net. Probably the largest Wood Turtle

I've ever seen was found in the process of mating with a much smaller female; quite a late record, being in mid-July.

Ultimately, I found two of the target species, *Stylurus scudderi*, a starkly beautiful black and yellow dragonfly and *Somatochlora elongata*. These were found in several sites each and some exuviae of *Stylurus* added another two sites. *Ophiogomphus howei* was already done for the season by the time the survey started. The remaining *Somatochlora forcipata* and *Ophiogomphus anomalus* were not located, though extensively looked for. One particularly confusing species was found in several locations and that was *Somatochlora minor*. Along with *S. elongata*, *S. minor* was located in thin outlet channels from beaver ponds and lakes where tall sedges and grasses overhang the waterways. *S. minor* is quite similar to *S. forcipata*, one of the target species and is, according to the books, supposed to be in dark woodland stream habitats, not out in the open in sedge meadows. I was pretty bummed when Mark corrected my specimens – but I guess I was so excited to find the species that I overlooked one salient feature, the fading of the two thoracic spots which remain bright on *S. minor*, but nearly disappear on *S. forcipata* shortly after emergence.

Several other species were confusing at first, particularly separating *Stylurus scudderi* from *Cordulegaster maculata* on a fly-by. It took some scratching out in the notebook but in the end I feel all were correctly identified. Another particularly pesky identification problem was the appearance of *Libellula quadrimaculata* in the UP. It was quite common on open water of ponds and streams but seemed duller, smaller, and lacked the bright stigma markings that make it so distinctive in the Lower Peninsula. Almost all of the specimens seen (and caught) were quite ratty and I'd hate to admit how long it took to actually catch one and figure out what it was. *Macromia illinoensis* also took me by surprise as I had no idea it was such a huge dragonfly, right up there with *Hagenius*.

In summation, on the two species located, my findings (and those of Sean later in the summer) determined that *S. scudderi* is probably fairly common and may actually benefit from disturbance at road-stream crossings when new culvert work is done. It appears the disturbance removes heavy vegetation near the road, and that some small amount of construction erosion provides in stream sandbars on which *S. scudderi* rests, and that it and other species use the culvert tubes both as feeding locations and passages from one side of a road to another. For *Somatochlora elongata*, several sites were located that all appeared to be stable and in all likelihood had little chance of disturbance from logging or roadwork due to their locations.

This was a great opportunity to have seen much of the western UP, to sweat a lot, and be introduced to many new species of dragonflies and habitats. Numerous new county records were obtained and my watchful eye even found several new butterfly county records for Mo Nielsen at MSU. I thank Mark for the tip and for confirming my specimens and Ethan Bright for determining the exuviae.



MOS Updates

Mark O'Brien

Welcome to the fall issue of *Williamsonia*. It has been quite a season, as we have some reports from a number of participants in this issue. I welcome a new contributor, Julie Craves of Dearborn. She is an active ornithologist, and is quickly becoming the Ode Queen of Wayne County.

After looking over our maps and databases, and talking to a number of MOS people, I have decided to redo our mapping to actually reflect records in the database, rather than have the maps include both literature records and actual MOS-catalogued specimens. Records based solely on the literature will be indicated as such on the maps. This will hopefully encourage surveyors to collect in those counties and provide new specimen records for the database. Look for some new maps in 2002.

In September, I gave a presentation to the Oakland Co. Audubon Society, which unfortunately, was Sept. 11. It was very well-attended, and for a little while, was a diversion from the horrific events that had been unfolding. Tom Heatley was there, and it was good to see a familiar face. Julie Craves was there too, so I finally was able to meet her in person and gather some specimens from her collecting efforts.

As these fall days turn to more wintry weather, it is always fun to see just how late *Sympetrum vicinum* stays active. These red flashes dance along pathways and perch on anything that allows them to gather warmth in the waning days of fall. Some years they are still flying into early November, and with the exception of some midges and crane flies, are often the only flying insects that are obvious. What I like about observing them in the

fall is that you can see them easily with binoculars and watch their activities. Since there are no other dragonflies to confuse them with, you can be quite sure about the ID of the *Sympetrum*. They also move more slowly later in the season, making observations easier.

This winter we will need to firm up plans for the upcoming GLOM 2002 in July. It was a lot of fun last year to venture into Canada for the first meeting, and I hope we can show our visitors some good dragonfly habitat within a one-hour radius of Higgins Lake. Streams, seeps, fens and bogs should provide some excellent collecting results in early July, and it will be interesting to see what results we come up with. The typical scenario is to have day-long field trips and meet in the evenings for informal discussion, slides, and perhaps workshops. As anyone that has been to a Dragonfly Society of America meeting or regional meetings can attest, this format works great, and attendees get to know each other much better than sitting in a meeting all day. I encourage MOS members to attend this event during July 1-4. A special mailing in January will have all the details.

Next year would be a good time to revive the field trips that we held a couple of years ago. Our focus however, will be more habitat-specific. This summer's results from Wayne Co. and Ives Road fen indicate that we need to give more attention to surveying where small, trickling streams run through wooded and/or shrub-dominant areas. These ground-water fed streams may likely harbor a number of species of *Somatochlora*— *S. linearis*, *S. tenebrosa*, *S. williamsoni* and *S. walshii*, and perhaps even *S. ensigera* in SE or SW Michigan. At least one trip should be made to Lost Nations SGA in Hillsdale County during mid to late July for a *Somatochlora* search. That area has a number of potential sites that we should look at. It is also imperative that we find more sites for *S. tenebrosa* to add to the two counties that we already have listed. Feel free to suggest other sites that need exploring!

Ethan Bright is back in the alcohol range again, now that he is working as our Collections Research Assistant. He's working on his doctorate, which keeps him busy with Chironomid larvae. Ethan's busily identifying odonate larvae, and if you see him, ask him how many *Boyeria vinosa* larvae he's seen...

Finally, I thank all of the people that have made donations to the MOS this year, whether in the form of specimens, observations or cash contributions. The monetary donations help us produce the newsletter and to purchase collecting supplies. Remember, that if you need glassine envelopes or other supplies, just ask and I'll send the items out to you.

Enjoy the fall!

Williamsonia Fall 2001

Late Summer in the Huron Mountains

Mark O'Brien

In 1996, I initiated a survey of the Odonata of the Huron Mountains in Marquette County, Michigan. As some of you know, the Huron Mountains are almost entirely within the borders of the Huron Mountain Club, a private hunting/fishing/resort that is closed to the general public. The Huron Mountain Wildlife Foundation is the sponsoring agency for anyone wishing to do research on the HMC property, and the HMWF has been very supportive of basic survey work as well as more in-depth studies on the fauna and flora of their lands. There are some areas of the HMC that have never seen a logger's saw, and believe me, the area really is a gem. Because of its remoteness and its private ownership, the area has retained the pristine aspect that makes it such a wonderful place to do any kind of fieldwork.

Over the past few years, I have visited the HMC to survey the Odonata fauna at particular times of the season, usually with a stay of about a week each time. Ethan Bright and Mike Kielb have also visited to do additional survey work. As a result, we have a manuscript nearly ready for publication. However, there was one gap in our knowledge – late August. Now, late August in Washtenaw County has quite a different feel to it than the same period in the UP, and we lacked late season records that would give the manuscript a more complete treatment of the fauna.

So, On August 19 Adrienne and I picked up our daughter Marjorie at Blue Lake Fine Arts Camp (N of Muskegon) and stayed the night at a friend's cottage on Burt Lake. We arrived at the Huron Mountains on the afternoon of the 20th and started our explorations for what will likely be our last trip to the site.

My trip this time was two-fold: collect and observe any Odonata, and photograph the species and sites we visited in greater detail than I previously had done. In all honesty, I didn't know what to expect. It had been quite hot and dry there for much of the summer, and although I figured that we would see lots of Aeshnas, I didn't know what else might show up.

The researchers that visit the HMC stay at the Stone House on Ives Lake. Ives Lake is a large, rocky-bottomed lake with rocky shores around most of its perimeter, but also with some shallow sandy bays with lots of sedges (see photo below). Elm Creek flows into Ives Lake, as well as a small stream that runs from a beaver im-

poundment on the SW side of the lake. Therefore, Ives Lake is quite representative of the lake habitats in the HMC with a few exceptions. Any collecting on or near Ives Lake will likely turn up many of the species from the region, and that is what we have found so far in our survey work. In addition, many of the roads to the other sites really require a 4WD vehicle, and after I nearly lost our Plymouth Voyager on a muddy 2 track last year, I was less inclined to get to the more out-of-the way sites this year. So, our main focus was the region around Ives Lake, with visits to Florence Pond – a boggy margined lake; Lily Pond – a small lake with lots of emergent vegetation protected by a ring of *Myrica gale*; Salmon-Trout River, south of the bridge at the main gate; Mountain Stream and a bit of Mountain Lake; and the beaver impoundment near Ives Lake. A lot of good dragonfly habitat to explore in four days.



On the first day, we added a new species for the HMC list – *Lestes congener*. That shouldn't be a big surprise since it is a late season species, but I was pleased to add it nonetheless. We also collected many *Sympetrum vicinum*, which was nice since we had only one or two records from before. Many males looked sexually immature with their yellow coloration, so my guess is that just like downstate, *S. vicinum* flies until the frosts hit it (definitely earlier near Lake Superior!). The other *Sympetrum* that was numerous was of course, *S. obtrusum*.

I expected to see lots of *Aeshna* and I was not left empty-handed. *Aeshna interrupta* was abundant at the two ponds, and *A. eremita* was numerous at Florence Pond. *Aeshna umbrosa* was collected near the outlet from the beaver pond and near Elm Creek. *Aeshna tuberculifera* was collected along the road near Lily Pond. *Boyeria vinosa* was collected along the Salmon-Trout River.

I was a little surprised to still be collecting *Enallagma carunculatum* in late August, but it was there in small numbers. *Calopteryx maculata* was rarely seen during our stay, so it must have a shorter emergence period in the HMC than it does in southern Michigan.

My biggest thrill was watching and catching *Somatochlora elongata* and *S. williamsoni*. Both species were common around the beaver impoundment that feeds into Ives Lake. On two afternoons, I watched males of both species carefully navigate the mucky banks where they searched for female companionship and drove off rival males. I did a quick and dirty capture and release, and in the course of an hour I netted 6 *S. williamsoni* and 2 *S.*

elongata. I hadn't really expected any *Somatochlores* up there in late August, so it was a welcome surprise.

By late August, the gomphids are gone, though we did see one worn and lonely male *Hagenius brevistylus* at Mountain Lake. Gone too, are many Libellulas. We found only 2 worn and old female *Plathemis lydia*. No *Trameas* or *Pantallas* were seen, quite unlike the situation here in the south.

I did have some other rather good luck at Ives Lake. The Stone House sits right at the edge of the lake, so one often finds exuviae on the stone walls by the lake. I knew that the mid-summer dragonflies like *Didymops* and *Macromia* would still have exuviae attached to the walls where they were protected from the elements. Although not

very date-sensitive, this method at least yields a "yes or no" result. I collected two Corduliidae exuviae that I thought were not *Epitheca* and could possibly be something more valuable, like *Neurocordulia*. I was right – Ethan Bright identified them as *Neurocordulia yamaskenensis*. That makes 2 exuviae collection records at Ives Lake for this elusive species!

In all, it was a successful trip. We got a few welcome surprises and added substantially to the late-season records for the UP and HMC. The species total now stands at 74 for the HMC. The two loons that swam below our bedroom window at 6 am every morning were especially appreciated, as were the coyotes and whip-poor-wills that serenaded us at night. Now, I can finish up the HMC Odonata manuscript and send it off to the Bulletin of American Odonatology. The many days I have spent at the HMC over the years will be fondly remembered. It's a very special place!

Notable New Dragonfly Records

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University of Michigan-Dearborn
Dearborn, MI 48128

I spent many of the dog days of the summer of 2001 doing Odonata surveys, particularly in Wayne Co. I recorded 45 species in Michigan. I had a number of new county records, most from Wayne Co. Here I describe the most significant of those new county records.

Shadow Darner (*Aeshna umbrosa*). I collected a male in my yard in Dearborn, Wayne Co. (T2S, R10E) on 4 September 2001, and another at Lower Huron Metropark, Wayne Co. on 2 October 2001. There are records in the MOS database from the counties surrounding Wayne (Oakland, Macomb, and Washtenaw) (O'Brien 2001a), but these are the first for Wayne.

Comet Darner (*Anax longipes*). On 8 July 2001, Darrin O'Brien and I observed 5 at an old gravel pit in the Kossey Tract of Ives Road Fen, Lenawee Co. We attempted to collect a specimen on 21 July 2001, but although we observed 3 (including and ovipositing female), we were unable to secure one. Previously only recorded from the E. S. George Preserve in Livingston Co. (O'Brien 2001a, 2001b).

Russet-tipped Clubtail (*Stylurus plagiatus*). I observed several males at Willow Metropark, Wayne Co. in August 2001 patrolling the Huron River at the Big Bend picnic area; the river here has a sandy, pebbly substrate, and is fairly shallow and fast. More were found at the last parking lot near the Chestnut picnic area at Willow, where the river has a much siltier substrate than at Big Bend; on 18 August 2001 there were at least 12 patrolling a short (~100 yds/92 m) stretch of river. A few could be found perching in the shrubs adjacent to the river along the margins of the picnic area, where I photographed a male and a female. My latest date for this species was 6 at the latter location on 6 September 2001. On 21 July 2001 while hunting for the Comet Darners at the Kossey Tract of Ives Road Fen, Lenawee Co., I collected a number of exuviae. One of them turned out to be *Stylurus plagiatus*. While the Raisin River is less than 0.25 miles from the collection site, the gravel pit where the exuviae was found was not expected habitat. This species was previously only recorded from Alpena Co. (O'Brien 1998a).

Arrow Clubtail (*Stylurus spiniceps*). I observed adults

at Willow Metropark in August 2001. A few were patrolling the Huron River at the Big Bend picnic area (see above). Others were found by the last parking lot in the Chestnut picnic area, where in addition to patrolling the river they could also be located perching in the shrubs adjacent to the river along the margins of the picnic area, where I photographed several and collected 2 males. I netted and released a pair in tandem at the northernmost shore fishing area at Lower Huron Metropark on 8 September 2001. I collected a male on 2 October 2001 near the southern end of Lower Huron Metropark on 2 October 2001. Previously verified for the state only from Washtenaw Co., Livingston Co., and St. Joseph Co., (O'Brien 1997, 2001a).

Royal River Cruiser (*Macromia taeniolata*). Not uncommon along the Huron River at Lower Huron Metropark. I netted 5 in about an hour on 6 August 2001. Darrin O'Brien and I observed 1 perched on leaves overhanging the Huron River at Dodge State Park in Monroe Co. (R5S, R10E) on 18 August 2001; this was also a new county record although a voucher was not obtained. My latest record was a male on 25 August 2001 at Lower Huron Metropark. These sightings represent only the fourth and fifth counties in which this species has been found. Specimens and observations from the Huron River in Ann Arbor, Washtenaw Co. in 1998 (O'Brien 1998b) are the only other recent reports. Kormondy (1958) noted them from St. Joseph (1919) and Ingham (1948) counties.

Mocha Emerald (*Somatochlora linearis*). I collected a male at Lower Huron Metropark on 29 August 2001. It was foraging over a large mowed area adjacent to a fishless, slow creek bordered by forest. This species is included on the state list from two 1944 specimens collected by R. R. Driesbach from Midland Co. (O'Brien 2001a).

Brush-tipped Emerald (*Somatochlora walshii*). Prior to a population found in Washtenaw Co. in 1998, the furthest south in the state this species had been found was Osceola Co. (O'Brien 2001a, not Clare as cited in O'Brien 1998b). I netted and photographed a male on 31 July 2001 at Lakeville Swamp, Oakland Co. (T5N, R11E).

New Zygoptera for Wayne Co. included Amber-winged Spreadingwing (*Lestes eurinus*) at the University of Michigan-Dearborn on 27 July 2001; Variable Dancer (*Argia fumipennis violacea*) at Lower Huron Metropark on 22 July 2001 (not vouchered); Powdered Dancer (*Argia moesta*) and Blue-ringed Dancer (*Argia sedula*), both at Willow Metropark on 6 August 2001; Blue-tipped Dancer (*Argia tibialis*) on the Rouge River in Hines Park, Livonia on 27 July 2001; and Double-striped Bluet (*Enallagma basidens*) at Lower Huron Metropark on 2 October 2001.

Photographs of many of these dragonflies, as well as other species, can be viewed at <http://www.umd.umich.edu/dept/rouge_river/wcdragons.html>

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the Odonata fauna of our region. Within the first 24 hours after sending out an announcement of the group, there were 21 members. I suspect that will increase a great deal in the coming months. This is not meant in any way to replace our individual web sites, but rather to augment what we already have in a way that allows everyone to contribute in some fashion.

http://groups.yahoo.com/group/gl_odonata is the web page you'll want to visit to view the message threads, look at photos, files, or anything else that is of interest. In addition, here are the email addresses for the other mail-related functions:

Post message: gl_odonata@yahoogroups.com
Subscribe: gl_odonata-subscribe@yahoogroups.com
Unsubscribe: gl_odonata-unsubscribe@yahoogroups.com
List owner: gl_odonata-owner@yahoogroups.com (or [email mfbobrien@umich.edu](mailto:mfbobrien@umich.edu))

So, go ahead and join — it's been my experience that such groups have a lot to offer, no matter what your level of expertise.

NEW "E-MAIL" GROUP

Mark O'Brien

On October 1, the **Great Lakes Dragonflies** group was set up on Yahoo Groups to serve the Odonatists in the Great Lakes Region. I wanted something with a bit wider audience and more functionality than the michodo@umich.edu group I had set up several years earlier. The benefits of having a Yahoo-sponsored Group are many:

- all messages are archived and searchable
- members can join or leave the group on their own
- instead of receiving individual emails, you can ask for a "digest" of the day's messages in one mailing
- a calendar of events can be shown on the group web page
- members can post images or files for others to use
- we can set up a database on the web site — for example, a listing of the species in the Great Lakes and states or provinces where they are found with links to appropriate resources
- there is also a "chat" function for those with yahoo accounts (which are **free**, by the way).

I envision the gl_odonata@yahoogroups.com to be a multi-purpose means of exchanging ideas, sharing data and general cooperation amongst people interested in



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SOMATOCHLORA TENEBROSA AT IVES ROAD FEN

Mark O'Brien

Somatochlora tenebrosa (Say) has a checkered existence in the lore of Michigan records. The only published record for some time was based upon a specimen listed by Kormondy (1958) from Ingham Co., which in fact was not *S. tenebrosa*, but a male *S. hineana* Williamson, whose collection data was questionable (O'Brien 1998). Thus removed from the state list, *S. tenebrosa* was again added after Carl Freeman caught the first verified records for Michigan in Benzie Co. in 1999 (O'Brien, 1999) I now add a second county record for *S. tenebrosa*, far-removed from Benzie Co., indicating that this species is very likely to have a broader distribution in Michigan.

Somatochlora tenebrosa is a resident of small wooded creeks that can shrink to a trickle, and often run through fen and bog-like habitats. Ranging through eastern North America, it reaches west to Wisconsin (Dunkle 2000). Walker and Corbet (1975) indicate that this species prefers shaded areas near small streams, often flying after sunset.

Ives Road Fen (IRF) comprises an area of approximately 697 ha, in NE Lenawee Co., just south of Tecumseh, MI. It is managed by The Nature Conservancy and there have been significant efforts to try and restore the prairie fen and remove invasive species, such as glossy buckthorn. The fen has a series of small streams emanating from the hillside above the sloping fen, and these streams run through a mucky/peaty soil overlying a calcareous substrate. Several small creeks braid their way through the fen, some running through the restored prairie fen with abundant calciphilic plants (especially Indian Plantain), and others through a shrubby understory dominated by glossy buckthorn. Some of these creeks start out as seeps at the base of the hill and coalesce into larger rivulets that may either join a larger stream feeding into the Raisin River to the east, or may disappear into the ground farther down the slope.

It was this type of habitat that alerted me to the faint possibility of a remnant population of Hine's Emerald (*S. hineana* Williamson) at Ives Road Fen. I first looked for *S. hineana* at IRF in early July of 2000. A single, large *Somatochlora* was seen flying overhead at the top of the slope near some trees, but I was unable to make any kind of specific identification. Subsequent trips later in July that year failed to turn up any more sightings (O'Brien 2000), probably because I was expecting *S. hineana*

habits, not *S. tenebrosa*.

Mike Kielb accompanied me on July 1, 2001 to search for Hine's Emerald at IRF. We split up to maximize our search effort, and at approximately 9:30 am, Mike called me on the radio and was excited about a dragonfly he'd finally caught. I made my way over, and was extremely surprised to see not just an emerald, but a *Somatochlora*! However, it was not *S. hineana*, but its sister species, *S. tenebrosa*. We have fewer locality records for *tenebrosa* than *hineana* in Michigan at this time, so it was a great find, nonetheless. We did see several more males flying along the edge of the woods, perhaps looking for prey. Most were flying about 2 to 3 m above the ground. No other specimens were captured.

On July 13, 2001 Ethan Bright accompanied me to IRF to search for more *S. tenebrosa*. Although no males were observed in the area where the males on July 1 had been seen, we did locate one female *S. tenebrosa* flying and perching on a branch about 2 m above a small creek south of a small boggy area. There is a shrub overstory for most of the length of the stream. Although we did not collect the dragonfly, the body size and ovipositor shape was characteristic of *S. tenebrosa*.

COLLECTION DATA IN MICHIGAN

Benzie Co., Blaine Twp., T25N, R16W, Sec, 25 - edge of cedar swamp, 07/27/1999, Carl Freeman CF-990727-3 [MOS0020256] - 1 female
Benzie Co., Blaine Twp., T25N, R16W, Sec, 25 - dry field at edge of swamp, 08/08/1999, Carl Freeman CF-990808-1 [MOS0025457] - 1 female
Benzie Co., Blaine Twp., T25N, R16W, Sec, 25 - dry field at edge of swamp, 08/08/1999, Carl Freeman CF-990808-2 [MOS0025457] - 1 male
Benzie Co., Blaine Twp., T25N, R16W, Sec, 25 - flying down Herring Rd., 08/08/1999, Carl Freeman CF-990808-3 [MOS0025401] - 1 male
Benzie Co., Blaine Twp., T25N, R16W, Sec, 25 - in field next to cedar swamp, 07/29/2000, Carl Freeman CF-00729 [MOS0026702] - 1 female
Benzie Co., Blaine Twp., T25N, R16W, Sec, 25 - in field next to cedar swamp, 07/29/2000, Carl Freeman CF-00729 [MOS0026919] - 1 male
Lenawee Co., Ives Road Fen, T6S, R4E Sec. 10, NW edge of property, 07/01/2001. M. Kielb & M. O'Brien, MFO010701-1 [MOS0026021] - 1 male

Based upon the Benzie and Lenawee County records and the descriptions of the habitats, it would seem that *S. tenebrosa* should be seen more often in Michigan than it has been, but I think two factors may be responsible for so few sightings. First, its habitat of small streams with woody growth overhanging the stream makes it difficult to find and survey such sites. Second, if the adults tend to fly nearer the wooded area than away from the site,

they are less likely to be found. It is a fact that such sites are rarely surveyed, but in light of the several interesting species of Odonata that frequent such habitats [*Cordulegaster diastatops* (Selys), *C. erronea* Hagen, *C. obliqua* (Say), *Somatochlora linearis* (Hagen), and other emeralds], these habitats deserve more inspection. In addition, I think we need to do more survey work late in the day and into early evening when some of the Odonata are obviously out and we are not.

ACKNOWLEDGMENTS

Many thanks to Mike Kielb and Ethan Bright for being such great field companions and for being those extra eyes that make such ventures pay off. Carl Freeman continues to impress me with his catches in the Grand Traverse Bay area, and his assistance is greatly appreciated. I also thank Chris Clappitt of the Michigan Chapter of The Nature Conservancy for access to Ives Road Fen.

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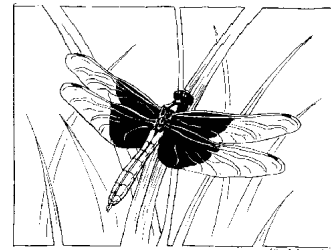
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NEW PUBLICATIONS OF GREAT LAKES INTEREST

JOURNAL ARTICLES

Artiss, T. 2001. Structure and function of male genitalia in *Libellula*, *Ladona* and *Plathemis* (Anisoptera: Libellulidae). *Odonatologica*, 30(1):13-27.

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Zebra Mussels Observed on Dragonfly Larvae in Otter Lake

Margi Chriscinscke

Great Lakes Science Center, 1451 Green Rd.,
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In the previous issue of *Williamsonia*, Mark O'Brien discussed whether or not zebra mussels (*Dreissena polymorpha*) could have an effect on odonata larvae by attaching to their exoskeletons. The prevailing thought was that dragonfly larvae are active enough, and molt their skins often enough, except for perhaps during the final instar when the larvae may be in pre-emergence holding patterns, that zebra mussels would not have a chance to attach and grow to a sufficient size that would have any adverse impacts on the general health of the dragonfly. Shoreline surveys of exuviae support this view. Dragonfly exuviae from successful emergences have been found that have as many as 3 zebra mussels attached to them.

On 13 June, 2001, a dive team from the Great Lakes Science Center in Ann Arbor was surveying Otter Lake, a marly inland lake within the Sleeping Bear Dunes National Lakeshore, for native unionids. Their surveys from the previous year showed a healthy clam population with a minor zebra mussel component - approximately two dozen zebra mussels were found and summarily destroyed during the course of the survey. During the 2001 survey, it was found that the zebra mussels had spread throughout the lake and had colonized clams, fallen branches, aquatic vegetation, and dragonfly larvae. One of the divers commented that while swimming at a depth of 10-12 feet and without really looking for them, he found a half dozen larvae that had more than a few zebra mussels attached. Another diver commented that the larvae he found bearing zebra mussels were more common in one section of the lake than in any other. Dragonfly larvae encumbered by zebra mussels were observed crawling along the substrate or were immobilized by the mussels. All of the dragonfly larvae observed were still alive. One larva was collected and brought back to the Ann Arbor lab for identification.

The larva was identified as *Didymops transversa* and measured 19mm in length. Thirteen zebra mussels, ranging in length from 3.6mm to 10.3mm, were attached to the larva. Ten of these were attached directly to the dorsum of the abdomen or a portion of one of the wing pads, while three mussels formed a second layer which had piggy-backed onto mussels that were directly attached

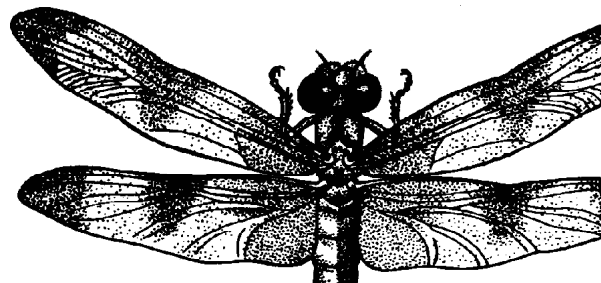
to the dragonfly's exoskeleton.

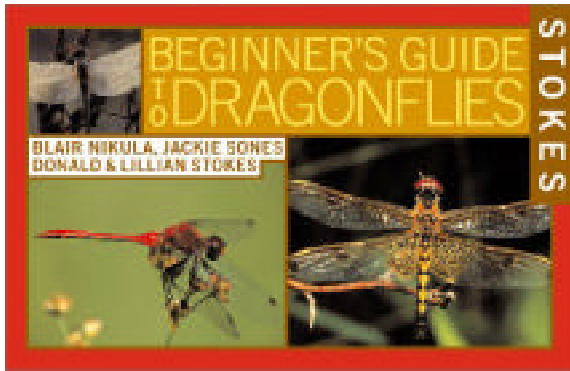
Sampling that took place in Otter Lake later in the season with an Ekman grab has thus far not replicated the observations made by the divers. On August 27-28, replicate samples were taken at 1 meter depth intervals, starting at 0.5m, and continuing toward the middle of the lake. I have processed the samples shallower than 3.0 meters and have found one dragonfly larva (*Dromogomphus spinosus* - not a final instar) bearing one zebra mussel. We hope to expand upon and repeat this sampling over the course of the season next year, in combination with diver surveys, so that we can determine the seasonal aspects of the effects of zebra mussel colonization on Odonata larvae. This information should also allow us to address some of the following questions: Are certain larval lifestages more susceptible to mussel colonization? Are certain species or life history types more likely to be colonized (e.g. burrowers vs sprawlers, shallow water larvae vs deeper water larvae)? What percentage of the odonate community, at a given point in time, is affected by mussel colonization? Could zebra mussels have a significant impact on the larval odonate population structure in ponds or lakes?

The effects of zebra mussel colonization on odonate larvae may very well turn out to be insignificant, but it is important to consider what is happening to the larval instars underwater as well as what is evidenced by exuviae on the shoreline.

ODONATA-L RESUMES

Dennis Paulson's ODONATA-L MAILING LIST is back. Some of you may recall that a few months ago the immensely useful and popular Odonata List run by Dennis was shut down because his Internet service provider went under. It took a while, but the Odonata-L is back again, and it's a world-wide group. A lot of the "big names" in Odonata use the list, and in the past, it was always informative. To find out more about it, go to: <http://orion.ups.edu/mailman/listinfo/odonata-l> and you'll be able to subscribe via the web site.





New Book Alert!

As the season for gift-giving approaches, *Williamsonia* readers will be pleased to know that two new Odonata books have become available, and one book will be out early next year. (I have ordered a copy of *Dragonflies of Indiana*, and will review it for *Williamsonia* in the Winter issue.)

Stokes' *BEGINNERS' GUIDE TO DRAGONFLIES* (shown above) is not yet available, and the information that I have gives April, 2002 as the publication date. I will bet that the book will be profusely illustrated and a real good introduction to the study of Odonata.

DRAGONFLIES OF INDIANA, by James R. Curry, 2001. Indiana Academy of Science. 303 pp., with numerous color photographs. ISBN#1-883362-11-3. Can be ordered from Amazon.com and from the Indiana Academy of Science, 140 North Senate Avenue, Indianapolis, IN 46204. There is a review in the latest issue of *Argia*, and comments from others on the internet indicate that this is a really great book.

DRAGONFLIES OF THE WORLD, by Jill Silsby is a 200-page hardcover book from Smithsonian Press (in the USA) and CSIRO in Australia. It's publication date is listed as October 1, 2001, so it may already be in some of the major bookstores that begin with a "B." However, Amazon.com is offering it at a major discount (at least for now), at \$27.96 instead of the retail \$39.95. That's a good offer, so you may want to get it via the web. Publisher: Smithsonian Institution Press; ISBN: 1560989599; List Price: \$39.95. I have just received the book (10/22), and will write a review for *Williamsonia* for the winter issue. My first impression is that this book is a great addition to anyone's library. Lots of species from all over the world, chapters on ecology, behavior, and evolution. All of the photos are excellent!

MORE MOS NEWS

Welcome to Robert Cruden!

We now have an additional Odonatologist for Michigan. This fall, Dr. Robert W. Cruden became an adjunct curator at the University of Michigan. Bob's also a botanist, and has had a long career at the Dept. of Biological Sciences, University of Iowa. He is currently getting settled here, and should be around more often after November of this year. We think Bob will appreciate all of the different landforms and the many lakes and rivers that Michigan has to offer. Bob will probably divide his time between the UM Herbarium and the UMMZ. For a look at Iowa's fauna, see the paper co-authored by Bob: Cruden, R.W. and O.J. Goode, Jr. 2000. The Odonata of Iowa. *Bulletin of American Odonatology*. 6(2):13-48. We look forward to getting Bob out in the field and hope not to lose him in one of our many bogs!

Ontario Hosts the First Great Lakes Odonata Meeting

by Colin D. Jones

From July 3-6, 2001, Ontario's Natural Heritage Information Centre (<http://www.mnr.gov.on.ca/mnr/nhic/nhic.html>) hosted the first Great Lakes Odonata Meeting. Twenty-five Odonata enthusiasts from three states (Ohio, Michigan and Wisconsin) and one province (Ontario) met at Laurentian Lodge in the beautiful Algoma District of Ontario for what will hopefully become an annual event. The location was chosen for a number of reasons. It was relatively central as far as the Great Lakes Basin is concerned, the area had received little coverage in the past, and there was a lot of potential for interesting species of dragonflies and damselflies.

The area lies approximately 150 km east of Sault Ste. Marie, about 25km north of the town of Elliot Lake, and is situated in the transition zone between the Great Lakes Forest Zone and the Boreal Forest Zone. As such, there are both southern and northern elements represented in the flora and fauna. The area surrounding the lodge is largely undeveloped and is a mixture of actively harvested forest, and protected areas, including Mississagi Provincial Park and a number of newly created protected areas. As far as the Odonata are concerned, there is a great diversity of aquatic habitats, ranging from rivers such as the sandy-bottomed Boland and the gravelly-bottomed Little White, to wetlands such as the vast Stag Lake

Peatland, to numerous lakes and beaver ponds. The high hills of the area, combined with the vast forest and beautiful flowing rivers, were scenically stunning and were a definite highlight of the trip.

Day one of the meeting was largely meant as a travel day. Our first official event was a welcome and introduction to the meeting followed by an informal "wine-and-cheese" during which we had the opportunity to meet other ode enthusiasts from neighboring jurisdictions.

Following breakfast on day two, the weather was looking grim so we decided to have our first scheduled speaker, Mark O'Brien present his material on the Michigan Odonata Survey (MOS) in the morning, hoping that the weather would improve later in the day. Mark's very informative talk provided an overview of Michigan's well-organized statewide survey. The survey is a volunteer-based effort and Mark is the coordinator of the project and the webmaster for the MOS website (<http://insects.ummz.lsa.umich.edu/MICHODO/MOS.HTML>), an excellent on-line resource.

As it turned out, we made the right choice to have Mark speak in the morning. By the time Mark had finished his presentation, the rain had ceased and the sun began to peak out from behind dark clouds. In three separate parties, we convoyed north and west from the lodge to the Little White River. An extremely scenic road parallels the river and the three groups "leap-frogged" along the road for the remainder of the day surveying the river for Odonata. Highlights of the day included *Aeshna eremita* (Lake Darner), *Gomphus adelphus* (Mustached Clubtail), *Ophiogomphus carolus* (Riffle Snaketail), and *Helocordulia uhleri* (Uhler's Sundragon). The most exciting discovery of the day, and the entire trip, was *Ophiogomphus anomalus* (Extra-striped Snaketail). Marianne Clark caught a female of this attractive species along the road running beside the Little White River. In addition, the day before, David Bree had found an individual along the aux Sables River, near Espanola, Ontario on his way to the meeting. This globally rare species was only previously known from a total of six sites in Ontario.

In the evening of day two, I coordinated a photo "quiz" in order to test our identification skills. A combination of prints and slides were used and the questions ranged from relatively easy and straightforward identifications to those that were quite difficult. The "quiz" was meant to be fun-filled and educational and I think that both objectives were achieved.

Day three was very disappointing as far as the weather was concerned. Temperatures were cool and the sky was overcast with scattered showers. As a result, we were not very successful in finding adult Odonata and our attention turned to searching for exuviae (of which the iden-

tity of many has yet to be determined). We began our day with the entire group along the Boland River. After lunch we broke into two groups, one of which slogged into the vast Stag Lake Peatland, while the other travelled the roads northward to survey a variety of wetlands. The Stag Lake Peatland was fantastic and if the weather had been more cooperative we surely would have discovered some interesting species.

In the evening of day three, I presented a brief overview of the coordinated efforts underway in Ontario designed to gain further insight into our Odonata fauna. Specifically, I spoke about the yearly publication by the Toronto Entomologists' Association entitled *Ontario Odonata* - a publication that not only features the year's summary of records, but also various notes, articles, and papers on the Odonata of Ontario, as well as reviews of other publications, and news on the various projects underway in the province. I also spoke about the various recent publications available such as Catling and Brownell's excellent *Damselflies and Dragonflies (Odonata) of Ontario: Resource Guide and Annotated List* and of the Atlas of Ontario Odonata project coordinated by the Ontario Natural Heritage Information Centre, Ministry of Natural Resources.

Day three ended with an excellent slide presentation by Jay Cossey, a professional photographer from London, Ontario who dazzled us with his outstanding photographs of invertebrates, including lots of odes. We also had fun identifying (or at least trying to) some of his "unknowns", particularly the female *Enallagma*.

Although most people left immediately after breakfast on day four (due to the lengthy drive most had ahead of them), some individuals spent additional time surveying a few more areas since the weather had finally become warm and sunny! By the end of the meeting, we had recorded a total of 49 species (excluding the exuviae), six of which were new for the Algoma District list. I would be happy to supply anyone interested with a full species list. I may be contacted via email at colin.jones@mnr.gov.on.ca or by telephone at 705-655-2166.

Mark O'Brien will be hosting the 2nd Great Lakes Odonata Meeting at the Ralph A. MacMullan Conference Center, Higgins Lake, Michigan (<http://www.dnr.state.mi.us/SubIndex.asp?LinkID=435&sec=main&imageid=2>) from July 1-4, 2002. For more information, contact Mark at mfbrien@umich.edu.

Williamsonia

Quarterly Newsletter of the Michigan Odonata Survey
Volume 5, Number 4, Fall 2001

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