

ISSN 1061-8503

ARGIA

THE NEWS JOURNAL OF THE DRAGONFLY SOCIETY OF THE AMERICAS

VOLUME 14

25 September 2002

NUMBER 3



PUBLISHED BY THE DRAGONFLY SOCIETY OF THE AMERICAS

THE DRAGONFLY SOCIETY OF THE AMERICAS

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ARGIA, the quarterly news journal of the DSA, is devoted to non-technical papers and news items relating to nearly every aspect of the study of Odonata and the people who are interested in them. The editor especially welcomes reports of studies in progress, news of forthcoming meetings, commentaries on species, habitat conservation, noteworthy occurrences, personal news items, accounts of meetings and collecting trips, and reviews of technical and non-technical publications. Articles for publication in **ARGIA** should preferably be submitted as hard copy and (if over 500 words) also on floppy disk (3.5" or 5.25"). The editor prefers MS DOS based files, preferably written in WORD, WORD for WINDOWS, WordPerfect, or WordStar. Macintosh WORD disks can be handled. All files should be submitted **unformatted and without paragraph indents**. Each submission should be accompanied by a text (=ASCII) file. Other languages should be submitted only as text (=ASCII) files. Line drawings are acceptable as illustrations.

T. Donnelly (address below) is the interim editor of **ARGIA**.

BULLETIN OF AMERICAN ODONATOLOGY is devoted to studies of Odonata of the New World. This journal considers a wide range of topics for publication, including faunal synopses, behavioral studies, ecological studies, etc. The **BAO** publishes taxonomic studies but will not consider the publication of new names at any taxonomic level. Enquiries and submission of manuscripts should be made to **BAO** editor T. Donnelly, 2091 Partridge Lane, Binghamton NY 13903. Final submissions (after review) should be made on floppy disk, as above, with illustrations in final form and preferably adjusted to final size.

MEMBERSHIP IN THE DRAGONFLY SOCIETY OF THE AMERICAS

Membership in the **DSA** is open to any person in any country. Dues for individuals in the US, Canada, or Latin America are \$15 for regular membership and \$20 for institutions or contributing membership, payable annually on or before 1 March of membership year. Dues for members in the Old World are \$25.

Dues should be mailed to Jerrell Daigle, 2067 Little River Road, TALLAHASSEE FL 32311

The **BULLETIN OF AMERICAN ODONATOLOGY** is available by a separate subscription at \$15 for members and \$18.75 for non-members and institutions.

Cover: *Lanthus parvulus*, Dolly Sods, West Virginia (nearly three times natural size). En example of the northern Odonata that we found in West Virginia. Photo by Nick Donnelly

The 2002 Annual Meeting of the Dragonfly Society of the Americas (DSA) was held on the 20th through the 23rd of June in Lewisburg, West Virginia. Post-meeting activities included a trip to Elkins area and the Ohio River from the 23rd through the 28th. Sixty-eight people attended the meeting in Lewisburg but by the end of the week, a record number of 75 enthusiastic attendees participated in this huge gathering!

One can follow our photo exploits on several websites. They are
<http://mcnet.marietta.edu/~odonata/dsa/dsa2002a.html>

<http://www.windsofkansas.com/world.html#dsa2002>

and

<http://hisl.tamu.edu/images/wv>.

Thanks to Dave McShaffrey, Roy Beckemeyer, and Ryan Caesar, respectively.

Our first evening was spent sampling the local restaurants and congregating in the parking lot of our hotel, the Brier Inn. After I unsuccessfully attempted to lead the group in a chorus of "Country Roads", we went to bed in hopes of some good dragonflying the next day.

As we gathered for our fieldtrips on Friday morning, I breathed a sigh of relief. The sun was brightly shining and the forecast called for much of the same. Some of the various destinations for the next two days were the Greenbrier, New, and Meadow Rivers, Cranberry Glades Wilderness Area, Anthony's and Knapp's Creeks, Watoga and Little Beaver State Parks, and Buffalo Fork, Sherwood, and Moncove Lakes.

Friday evening, we had our DSA business meeting (see Sid Dunkle's minutes report elsewhere in this issue) upstairs in the Brier Inn conference room. Most importantly, the membership voted on and accepted a proposal for the 2003 DSA Meeting to be held the third week of June in Williams, California, just north of Sacramento. Tim Manolis, Kathy and Dave Biggs, and Andy Rehn will host it. Saturday evening we ate our dinner in the banquet room of the nearby Western Sizzlin. Later, we viewed many excellent presentations and slideshows from Hassan Amjad, Roy Beckemeyer, Dennis Paulson, Ken Tennessen, Steve Valley, and Natalia Von Ellenrieder.

After compiling the records I have received so far, there were four species collected or observed in the Lewisburg area that are officially new West

Virginia State records. Nick Donnelly and others observed but did not catch *Tachopteryx thoreyi*; Steve Hummell, Bill Maufray, and Ollie Flint have turned in *Ladona deplanata* records; many people collected *Libellula incesta*; and Jeff Hajenga collected *Sympetrum internum*, which was later identified by Sid Dunkle.

With the sun still shining on Sunday, twenty-eight attendees ventured on to our next destination-Elkins. After a great meal at the glaring yellow Mexican restaurant, everyone went back to the hotels to rest up for our dragonflying expeditions the next day. Field trips were taken to the beautiful Dolly Sods Wilderness Area, Shavers Fork, Blister Swamp, Valley Bend wetland, Canaan Valley National Wildlife Refuge and State Park, Spruce Knob Lake, and Blackwater Falls State Park. The weather cooperated in the Elkins area except for one brief shower that drenched the group atop Cheat Mountain on the Shaver's Fork. Two new records were caught in the Elkins area. Hal White first spotted *Libellula auripennis* and the next day Ollie Flint bagged it. Dan Bogar, Rosser Garrison, and Natalia Von Ellenrieder collected *Tramea carolina* at the Valley Bend wetland. This site was the surprise hit of the trip with thirty-four species of dragonflies and damselflies documented; George and Phoebe Harp alerted us to the beautiful *Aeshna mutata* flying there! After two days in the Elkins area, we were ready for our next destination- the Ohio River.

The original group was down to eight and our first stop was Greenbottom Swamp along the Ohio River. The species diversity was not as high as expected, but with one afternoon of traipsing in the muck, two more state records were accumulated. Bob Glotzhober and Joel Wachel collected *S. ambiguum* and Joel also discovered *Telebasis byersi*, a surprising northern range extension!

With the skies threatening rain (it couldn't last forever), we decided to go ahead and head to our cabin at McClintic WMA, where George Smolka finally joined the group. After reassuring Dave McShaffrey that George was not in cahoots with the Mothman, we decided to drive to the Ohio River at dusk in search of *Neurocordulia*. We waited until dark and with no glowing dragonflies in sight, we headed back to our cabin to rest up for the next day.

Our last field trip was an exciting excursion to two of the Ohio River Islands National Wildlife Refuge and Boaz Swamp. Patty Morrison and her USFWS

Dr. Corbet's most lasting contributions will surely be in his masterful syntheses of odonate biology in 1960 (DRAGONFLIES, Collins, with Cynthia Longfield and Norman Moore), 1962 (A BIOLOGY OF DRAGONFLIES, Witherby), 1980 (BIOLOGY OF ODONATA, *Annual Review of Ecology*), and 1999 (DRAGONFLIES: BEHAVIOR AND ECOLOGY OF ODONATA, Comstock). He has unhesitatingly shared his knowledge and ideas with many students and colleagues over the years and reaped in return a flow of unpublished information to assist in his efforts to produce a clear and cohesive picture of the lives of these fascinating insects. Although not having published on every aspect of odonate biology, he surely knows more about dragonflies than anyone else.

At a time of increasing interest in dragonflies among amateurs, Dr. Corbet has been a leader in keeping the science in odonatology. His papers have consistently presented new ways of thinking about odonates, with an emphasis on pulling together facts and hypotheses. His presence at many odonatological meetings has been an inspiration to his colleagues, and his plenary sessions at international SIO and WDA symposia have featured open discussions about topics of dragonfly biology that were stimulating and productive.

We are pleased to recognize Dr. Philip S. Corbet for his contributions to DSA and to the study of Odonata by naming him as an Honorary Member of The Dragonfly Society of the Americas.

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DSA NORTHEASTERN FIELD TRIP TO THE TUG HILL PLATEAU, NEW YORK

Nick Donnelly

Uncharacteristically clear and sunny skies ("Donnelly" effect? Hah, I say! Hah!) greeted 26 dragonfly enthusiasts at the Tug Hill field Northeastern meeting of the DSA on 12-13 July this summer. In an area thought of as the "rain forest of New York" the group found more than 50 species of odonates in this wild and poorly accessible summit plateau in northern New York. We especially were fortunate to have six visitors from Canada – a new high for the Northeastern meeting.

The Nature Conservancy has recently purchased 45,000 acres of partially forested land, and will

retain nearly 15,000 acres as a preserve in Lewis County, which until recently has been one of the more poorly known parts of New York for odonates (as well as birds, butterflies, and everything else).

The group included a healthy mix of veterans and beginners, and much of the time was spent mentoring the more inexperienced participants while standing in cool streams. Happily a nice mix of common and less common dragonflies and damselflies were present, and many people also helped to dredge larvae. On Friday evening the group gathered in Whetstone Gulf State Park for a communal cook out

Friday was spent in the core area of the TNC property, which is known as the G&W Road. Most of the time was spent on one of the branches of the Mad River, but in the early stages of our severe drought this year, this was an easily wadeable stream. A nearby beaver dam yielded *Cordulegaster diastatops*, *Gomphaeschna furcillata*, and *Somatochlora williamsoni*, and *Gomphus desertus* were plentiful along the stream. Many of the group were butterfly enthusiasts, and there was considerable interest over several local species, including the Canadian subspecies of the Tiger Swallowtail.

On Saturday we visited some lovely streams on the southern slope of the plateau. Although the odonates were not outstanding, the weather continued to be spectacular, and *Hagenius* is always a treat – especially up here in the north. Sunday was going-home time, and some of the best finds were made that day after the group dispersed. Michael Viet found a new locality for *Ophiogomphus anomalus* in Herkimer County. An intrepid little band of three casual collectors followed Jim Bangma and Sheryl Chacon to a dirt road in a forest east of Lowville where they took five species of *Somatochlora* without even getting their feet wet! All in all, it was a good weekend.

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HIGHLIGHTS FROM THE GREAT LAKES ODONATA MEETING, HIGGINS LAKE MI, JULY 1-4, 2002

Mark O'Brien

The second GLOM was a success, as the intrepid participants braved the heat and 4th of July crowds to gather at the Ralph A. MacMullin Center (RAM) at Higgins Lake. Although the attendance was down due to the holiday, sixteen people registered

for a couple of days of Odonata surveying and sharing of expertise. The weather did not let us down. It was at least 90°F each day with high humidity -- perfect for the dragonflies, and the evenings were warm and bug-free. Each day started with breakfast at the RAM Center, and we were provided bag lunches for the day. We made it back in time for dinner each day, which was pretty amazing, considering that if we had chosen to do so, we could have stayed out until 8 or 9 pm hunting Odonata. (CR= County Record)

July 1. People began arriving in the mid-afternoon, and that evening everyone introduced themselves, and then I provided an overview of the aims of the meeting. Some had traveled quite a distance - 10 hours for some - so a cold beer and a cool meeting room was a good way to end the day!

July 2. We assembled in the parking lot and car pooled to our destinations. Most of the vehicles had someone with one of the FRS radios (2 mile range?), which kept us together pretty well. They also provided amusement with random comments coming from everyone. Our first stop was along the **AuSable River in Crawford Co.**, just E of Grayling. There were not a lot of Odes flying at that time, but we did find: *Calopteryx maculata*, *Calopteryx aequabilis*, *Ischnura verticalis*, *Argia fumipennis*, *Chromagrion conditum*, *Enallagma* spp., *Gomphus exilis*, *Ophiogomphus colubrinus*, *Boyeria vinosa*, and *Ladona julia*.

Stop 2 was in **Oscoda Co.**, where a few went off to listen for Kirtland's Warbler (heard one), and that group rejoined the main party at **Mack Lake**. Mack Lake is a typical shallow boggy-margined lake surrounded by sandy jack pine and oak habitat. Nonetheless, the spot had a good place for us to gather for lunch, and our collecting was very worthwhile. *Nannothemis bella* was present in small numbers on the sedge-matted margins of the lake (which had been lowered by lack of rain). We did collect the following:

Leucorrhinia intacta, *Epithea princeps* - CR, *Anax junius*, *Celithemis elisa*, *Gomphus spicatus*, *Lestes disjunctus*, *Enallagma ebrium*, *Enallagma hageni*, *Ischnura verticalis*, *Nehalennia irene*, *Libellula luctuosa* - CR, *Libellula pulchella*, *Plathemis Lydia*, *Ladona julia*, *Sympetrum obtrusum*

Stop 3, our final destination was the **Rifle River State Recreation Area** in Ogemaw Co. The Rifle River SRA is a great place that is virtually unexplored, Odonata-wise. I made a brief stop there

in 2000 to evaluate it as a potential area to be surveyed, and this time, we came with enough people to make sure we saw everything -- or at least tried to. The Rifle River itself is only 20 feet or so across where we surveyed, but it gets to be a wider recreational river a few miles downstream, which has yet to be surveyed. In addition, there are numerous lakes, some very different, in close proximity, and a series of eskers traverse the area. In all, it was a glorious place to visit with east access to the sites.

Grousehaven Lake - this marly, shallow lake is ringed with reeds, and on the day we were there, had a temperature of 92°F at the shoreline. It is spring-fed, and supports an array of Odonata. We were also rewarded with a big patch of showy lady's slipper orchids not far from the edge of the lake. We saw mostly libellulids here, and the Eastern Pondhawks and Widow Skimmers were very abundant.

Enallagma antennatum, *Enallagma hageni*, *Enallagma ebrium*, *Ischnura verticalis*, *Argia fumipennis violacea*, *Libellula luctuosa* - CR, *Libellula quadrimaculata*, *Libellula pulchella* - CR, *Pachydiplax longipennis* - CR, *Erythemis simplicicollis* - CR, *Ladona julia*, *Plathemis Lydia*, *Leucorrhinia intacta*, *Celithemis elisa*, *Celithemis eponina* - CR, *Sympetrum* sp. teneral, *Epithea princeps*, *Dorocordulia libera*, - CR, *Epithea cynosura*, *Gomphus spicatus*, *Gomphus exilis*, *Anax junius*

Across the road, a stone's throw away is **Lodge Lake**, a deeper, mucky-bottomed lake with abundant macrophytes along the shore, and lots of vegetation near the surface. This lake is as different as can be from Grousehaven, and we saw some different species there. Kurt Mead caught a Cyrano Darner, which was a big catch for the spot! Big Nasty Leeches were also abundant!

Nasiaeschna pentacantha - saw several - CR, *Dorocordulia libera*, *Libellula incesta* - CR, *P. longipennis*, *L. luctuosa*, *P. Lydia*, *E. simplicicollis*, *L. intacta*, *L. pulchella*, *L. julia*, *Ischnura verticalis*, *Enallagma exsulans*, *E. hageni*, *Anax junius*

Grebe Lake: *A. fumipennis*, *E. geminatum*, *E. hageni*, *E. ebrium*, *Lestes vigilax* - CR, *A. junius*, *Arigomphus furcifer* - CR, *G. spicatus*, *D. libera*, *Celithemis eponina*, *E. simplicicollis*, *Libellula incesta*, *L. luctuosa*, *Ladona julia*, *Leucorrhinia frigida*, *L. intacta*, *Pachydiplax longipennis*

Jewett Lake: *A. fumipennis*, *E. geminatum*, *E. hageni*, *G. spicatus*, *G. exilis*, *D. libera*, *L. julia*, *L. incesta*, *L. luctuosa*, *L. intacta*, *S. obtrusum*, *Perithemis tenera* - CR

There are also several creeks that feed into the Rifle River. At **Skunk Creek**, a bunch of us got out and looked around while Margi did some kick-net sampling. The small creek and its surroundings supports the species that are typical for that area:

Calopteryx maculata - adults abundant along the shoreline vegetation

Cordulegaster maculata - larval specimens

Boyeria vinosa - larval specimens

Dorocordulia libera - along roadside near creek

Lestes dryas - in sedges near creek

Finally, we sampled a stretch of the **Rifle River** where a suspension footbridge crosses it above a riffle area. The Rifle River? At that point, about half the group spread out along the river to try and net anything passing by. *Gomphus lividus* was common here, as were *Calopteryx maculata*. *Ophiogomphus colubrinus* was caught, and we also saw/collected *D. libera*, *Calopteryx aequabilis* - CR, *P. lydia* and *Epitheca princeps* was flying by. There are many other spots S of where we collected where the river is wider, but we did not have time to check them out. Certainly a watershed that needs more investigation.

The whole area looks like a great place to look for various damner species, so perhaps an August trip to RRSRA would be a good idea. Who knows what would turn up?

That afternoon, we put the pedal to the metal and got back around 5:30 - in time for dinner. In the evening, we compiled the list of the day's Odonata, and had several presentations. We tried identifying Odonata larvae with the aid of the video projection system and a video camera attached to a dissecting scope. Using Ethan Bright's key, we were able to go through the process of identifying some known specimens. That was actually pretty instructional, and I think gave some insight on the need to learn larval morphology.

July 3

We left the RAM Center after a filling breakfast, and I led the way with a cooler filled with everyone's lunch. The main purpose for the day was to visit some potential Hine's Emerald sites near Alpena. It was a longer trip than anticipated, but

well worth it after we finally arrived. The road to Misery Bay leaves Alpena through some big and ominous-looking industrial sites, but within a mile or so, we came across some beautiful fens and marsh areas on Lake Huron. After some consultation, we decided to split into groups and survey the area. Having the FRS radios really helped out, since we could alert the others to interesting finds. At some point before noon, I heard Colin Jones say something about a possible Hine's emerald female. Leave it to the Canadians to get the first sighting. We met for lunch (had to, I had all the food and water) and Colin brought out two envelopes with wriggling dragons inside. He opened the first - a male *S. hineana*! The second was a female. It turns out that the youngest participant, Robbie Oldham (10) caught the male *hineana*. After lunch we drove back to the place where the two were caught. We released the female after photographing her, and after I decided that the site constituted a new site more than 1 km from the last one recorded by Wayne Steffins in 1999, we kept the male as a voucher after photographing him. I later netted and released two males along the same road and two-track. I also saw what I think was a *hineana* flying over the Misery Bay road. They are our largest emerald, and are pretty darn distinctive.

Marjorie caught a *Somatochlora walshii* along the main dirt road which was a good find, too. On the 2-track I saw an aeshnid fly up and land on the trunk of a tree. Very un-*aeshna*-like. Colin had said earlier that he had thought he'd seen *Aeshna clepsydra*. After several unsuccessful attempts, I finally netted a specimen. It is hard to net something when those small spruce branches get in the way. Aha! It was different, it was . . . *A. siichensis*! The last place I would have searched for it, since I associate that species with boreal climates. I netted several more along the road, and that was a "lifer" for me, as the bird-people put it. The small pools along the two-track look to be a good spot for more emeralds. There are very few recent records of this species, and it was a real treat seeing it in Alpena Co.

While we were lurking amongst the cedars, Bob Dubois and Kurt Mead were on a fen near Misery Bay, seeing more *Nannothemis bella* and *Amphiagrion saucium* than they could possibly count. Bob swept his net a couple of times and had a few dozen specimens. I had planned on going there on the return trip, but the threatening sky did not look promising. The other group had gone into the woods on a different road, and Margi Chrisinske and Paul Desjardins came out with a

the upright flange found on female *pallidula*. Virtually all *minuta* I saw were perched on grasses, ferns, or shrubs, less than 1 m above ground and 2-8 m from the pools; none associated directly with open water. Temperatures were c. 78-82 degrees F (c. 24-28 degrees C), with thin, scattered clouds and a light breeze.

Other species at the pools included: one glimpsed male *Lestes*, at least five male and female Citrine Forktails (*Ischnura hastata*), and one teneral male Caribbean Yellowface (*Neoerythromma cultellatum*), the latter also photographed and collected. Dunkle offers 15 March as the earliest flight date for Florida *cultellatum* and Paulson (2001) did not encounter it during his January 2000 trip that produced many unusual seasonal records. The presence of a teneral during February appears to be an early U.S. flight record. A short distance north of the trailhead, one red male "Antillean" *Orthemis* sp. and one male Band-winged Dragonlet (*Erythrodiplex umbrata*) were seen over saline flats along the road. Three additional species of interest near the trailhead were Southern Bald Eagle, Key Deer, and Florida Duskywing (*Ephyriades brunneus*), a West Indian butterfly restricted in the U.S. to pinelands at the tip of the Florida peninsula and the Florida Keys.

ACKNOWLEDGEMENTS

I thank Dennis Paulson and Jerrell Daigle for providing me with notes from their recent trips to southern Florida, Sid Dunkle for verifying the specimen of *minuta*, John Abbott for providing damselfly literature, and Victor and Enid Harvey for their hospitality during my visit to the Florida Keys.

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- WILLIAMSONIA FLETCHERI
ENCOUNTERED IN VERMONT**
- Bryan Pfeiffer**
- On 4 June 2002, while surveying for butterflies at a fen in Washington County, Vermont, I discovered a population of *Williamsonia fletcheri*. This appears to be the first (and long overdue) record for the species in Vermont.
- My partner Lori Barg and I were visiting the fen for my work on the Vermont Butterfly Survey (www.vinsweb.org/conservation/vbs). Limited Odonata were flying at the site that day, including *Cordulia shurtleffi*, *Libellula julia* (abundant) *Leucorrhinia hudsonica*, and one or more other unidentified *Leucorrhinia* species. Not yet flying was *Nannothemis bella*, which is more common later in June. The Zygoptera fauna was not investigated, with the exception of *Chromagrion conditum*. I was, after all, there to survey for butterflies. But I must admit to a certain conflict of interest: I had *Williamsonia* on my mind that day.
- Lori and I visited the fen from roughly 1029 to 1305 hrs. Ambient temperature at the start of the visit was 68F and at the end 71F. Winds were light, estimated at 5 miles per hour. And cloud cover during the visit was roughly 5 percent. The site is a graminoid fen, approximately 15 acres, with an open pool and a peat mat dominated by sedges. The surrounding woods are a mixture of northern hardwoods, red spruce and balsam fir. At this point, the landowner prefers that the location of the site remain undisclosed.
- While I was pursuing photographs of the only butterfly evident in the fen that day (*Callophrys augustinus*), Lori mentioned seeing a small dragonfly unfamiliar to her land briefly nearby. I did not get an opportunity to pursue this individual. (It was most likely *W. fletcheri*.) However, while crossing the fen in the vicinity of the open pond, I noticed and immediately netted a small cordulid. Field examination of the specimen revealed it to be a male *W. fletcheri*. Having obtained prior permission to secure significant voucher specimens at this site, I retained this individual. In the

immediate vicinity, a portion of fen dominated by sedge species and flooded, we observed approximately five other *W. fletcheri* individuals.

Lori and I briefly explored sun-lit portions of the woods west of the fen, finding no other *W. fletcheri*. This search was by no means comprehensive. Upon returning to the fen, we encountered additional *W. fletcheri* in other areas, for an estimated total of 8 to 12 individuals, including a male sunning on exposed vegetation and posing for some nice photographs.

The discovery will propel me to search for other Vermont locations for *Williamsonia* next spring. To the best of my knowledge there is no record for *W. lintneri* as well.

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PYGMY SNAKETAIL (*OPHIOGOMPHUS HOWEI*), NEW TO CANADA

Paul M. Catling, 2326 Scrivens Drive, Metcalfe, Ontario K0A 2P0 brownell@achilles.net

On 22 June 2002 at approximately 10 AM (New Brunswick time), I found 10 *Ophiogomphus howei* on the Canadian shore of the St. John River 1.6 km E of the church (Saint Coeur de Marie) at Baker Brook (47.3028°N, 68.4941°W, west of Edmunston), New Brunswick. This species was not listed for New Brunswick by Brunelle and Tingley (1994) or from the Atlantic provinces (Brunelle 1997), although it was indicated as a possible occurrence. It was also not listed with other recent additions to the Odonata of the Maritime provinces (Brunelle 1999), and is the first record for the province of New Brunswick and for Canada (Paul-Michael Brunelle and Stuart Tingley, pers. comm.).

Ophiogomphus howei is known from several counties in Maine (Brunelle 1999b, 1999c) including particularly parts of the Aroostook River near the Canadian border (map in Brunelle 1999c, p. 24). It is also known from other areas adjacent to Canada including Wisconsin (Tennessen 1993), New York (Donnelly 1999), Michigan's upper peninsula (O'Brien 1998), and east-central Minnesota (Carroll & Gunderson 1995). Not surprisingly *Ophiogomphus howei* has been considered a possible addition to the dragonfly fauna of Ontario (Catling and Brownell 2000). Its total range was mapped by Tennessen (1993).

The occurrence on the St. John River extends the known range only 35 miles (57 km) farther north,

but is most exciting as the first Canadian record of this declining species. *Ophiogomphus howei* is listed as a threatened species in Maine and is being considered for federal listing in the United States. Dams, which destroy naturally fluctuating and fast-flowing aquatic habitats, and deteriorating water quality are cited as reasons for range-wide declines (Schweitzer 1989).

The habitat of *O. howei* on the St. John River is fast flowing water, mostly 1-2 m deep, with riffles. The river is approximately 100m across with a bottom of stones, gravel and some sand behind boulders and along the shore. This corresponds to descriptions of habitat at other locations (e.g. Kennedy and White 1979, Tennessen 1993). At the point where *O. howei* was found the river splits into a number of channels that flow around several small islands and stone and gravel bars. One Pygmy Snaketail was emerging, others were disturbed from shoreline vegetation (grasses, shrubs, horsetail and sedges) and flew with a weak fluttering flight further up the open bank. In all cases it appeared to be the first flight. The gradually sloping riverbanks are open with unusual shrub and herb vegetation to 1 m high which is adapted to the fluctuating water levels (fluctuation over several metres).

At the *O. howei* station on the St. John River four other gomphids were present along 200 m of Canadian shoreline. There were two emerging *O. aspersus*, two emerging *O. carolus*, 60 emerging and/or teneral *O. anomalus*, and 25 emerging or teneral *G. adelphus*. Eighty-five exuviae of *O. anomalus* and that many of other *Ophiogomphus* spp. were found along this small section of shoreline. Interestingly *O. howei* and *O. anomalus* are often found together (e.g. Donnelly 1999). Exuviae of *O. anomalus* were found at several places along the St. John River between Edmunston and Clair and along this same stretch of river nymphs of *Cordulegaster maculata*, *Macromia illinoensis* and *Neurocordulia* cf. *michaeli* were also found.. The occurrence of a rich biodiversity of dragonflies including rare species indicates the extreme importance of preserving the upper St. John River in a natural state. The rich and unusual dragonfly assemblage here is associated with a high biodiversity including many groups of organisms.

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NEW STATE RECORDS OF *ENALLAGMA* FROM MINNESOTA AND NEW HAMPSHIRE

Dennis Paulson

Bill Mauffray listed these records on the World Wide Web list of North American Zygoptera based on my comments, but no further information was included, so I am taking this opportunity to present that information.

Enallagma clausum - MN, Beltrami Co., Upper Red Lake at Waskish, 30 May 1977, 2 males, D. R. Paulson (DRP collection).

Enallagma doubledayi - NH, Carroll Co., Madison, 7 July 1974, P. Miliotis (DRP collection).

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SOME ODONATA RECORDS FOR THE OXLEY NATURE CENTER, TULSA COUNTY, OKLAHOMA

Roy Beckemeyer

On July 18 and 19, 2002, I visited the Oxley Nature Center in Tulsa, Oklahoma, to give some programs and conduct some dragonfly observation walks. While there I also went through the Nature Center's insect collection to identify or verify the Odonata specimens there. While I did not have time to do a complete survey of the center habitats other than the pond near the buildings, many of the species noted are county records for Tulsa County.

Species seen live and positively identified in the field (most in the hand): 18/19 July: *Argia apicalis*, *Ischnura posita*, *Anax junius*, *Argomphus submedianus*, *Celithemis elisa*, *C. eponina*, *Erythemis simplicicollis*, *Ladona deplanata*, *Libellula incesta*, *L. luctuosa*, *L. vibrans*, *Pachydiplax longipennis*, *Perithemis tenera*, *Plathemis lydia*, *Sympetrum ambiguum*, *Tramea lacerata*, red *Tramea* sp.

In the collection were: *Argia apicalis* (no date), *Enallagma basidens* (D. Horton, 7/11/01), *Enallagma civile* (D. Horton, 7/11/01), *Ischnura verticalis* (B.W. Ball, 7/10/84), *Anax junius* (no date), *Epiaeschna heros* (fresh specimen that had gotten trapped in the building 7/16/02), *Argomphus submedianus* (B. Ball, 6/4/81), *Celithemis elisa* (K. Shreve, 7/11/01, D. Horton, 6/11/02), *C. eponina* (K. Shreve, 7/11/01), *Erythemis simplicicollis* (B.W. Ball, 6/29/83,

themselves in only twenty or thirty minutes would be answered.

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NICK-AT-NIGHT: EPISODE II

Jerrell J. Daigle, jdaigle@nettally.com

In August, a group of intrepid adventurers set out to explore Bartola, Nicaragua. The hardy souls were Ailsa and Nick Donnelly from New York; Bill Shepard from California; Texans John Abbott, Ryan Caesar and Allan Hook; Phoebe and George Harp from Arkansas plus Bill Mauffray and Jerrell J. Daigle from Florida. Nick, George, and John vividly remembered the Nicaraguan mud of last year; the rest now know it well! The Nicaraguan entomologist Jean Michel Maes, to whom we owe abundant thanks, arranged the trip for us. You can follow our photo adventures on Ryan Caesar's website at <<http://hisl.tamu.edu>> by navigating to Travels and selecting Nicaragua. Thanks, Ryan!

In the first morning, we caught a small plane from Managua to San Carlos, where we would take a boat ride 68 kilometers down the 200-meter wide Río San Juan to the lodge. We flew over the huge Lake Managua, home of the famous man-eating freshwater sharks. I kept wondering what would happen if we encounter them swimming in the river near the lodge! The 3-hour motor boat ride through rain and occasional rapids was neat! However, we couldn't swing at the gomphids flying over the deep river because we would tip the boat over, and it would be a long swim to the shoreline!

Once at the lodge, we picked out our rooms and settled in with all of our gear. The staff was very friendly and helpful. Maria and her daughter, Jacquelin, cooked up splendid meals for us, 3 times a day! We always had fresh fruit juice (jugo) with our meals. I still don't know what was in that purple Kool-Aid but someone said it was a mixture of grape and beet juice. Yum-yum! But I'll stick to the pineapple.

I should mention that the beds had mosquito netting over them and we shared the rooms with occasional bats that left calling cards, including on my precious reprints which then became undistributable. I didn't mind them since they ate the mosquitoes! Just wear your hat! Speaking of mosquitoes, we took malaria tablets and sprayed ourselves but Bill Shepard still picked up dengue fever, most likely in Managua where dengue fever is prevalent. He is doing a lot better, thank you! Blackflies were common near the river and were our only pest if you forgot to spray yourself with repellent.

The environment around the lodge was rain forest. We mostly collected on the muddy trails and the small streams in the forest. During periods of light rain (there was not much light rain; mostly it was a tropical downpour) or on cloudy days, we collected at some ponds near the lodge. Surprisingly, we found many dragonflies and damselflies or "pipilachas" as the Nicaraguans would call them. We found *Acanthagrion speculum*, *A. trilobatum*, *Argia adamsi*, *A. frequentula*, *A. indicatrix*, *A. insipida*, *A. johanella*, *A. oculata*, *A. translata*, *Enallagma novahispaniae*, *Heteragrion erythrogastrum*, *H. albifrons*, *Hetaerina miniata*, *H. titia*, *Ischnura capreolus*, *Lestes tikalus*, *Leptobasis vacillans*, *Mecistogaster linearis*, *M. modestus*, *Megaloprepus coeruleus*, *Neocyrtophyllus cultellatus*, *Neoneura amelia*, *Palaemnema distadens*, *P. gigantula*, *P. paulirica*, *P. nathalia*, *Perissolestes remotus*, *Philogenia carrilica*, *Protoneura amatoria*, *P. sulfurata*, *Psaironeura remissa*, *Telebasis digiticollis*, *Gynacantha membranalis*, *Aphylla* undescribed sp., *Archaeogomphus furcatus*, *Epigomphus compactus*, *Anatya guttata*, *Cannaphila insularis*, *Dythemis multipunctata*, *D. sterilis*, *Erythrodiplax fervida*, *E. funerea*, *E. fusca*, *E. umbrata*, *Miathyria marcella*, *Micrathyria ocellata*, *M. pseudoeximia*, *Nephropeltia phyrne*, *Orthemis discolor*, *Oligoclada umbricola*, *Perithemis electra*, *Perithemis* undescribed sp., *Rhodopygia hinei*, *Tauriphila argo*, *Tramea binotata*, and *Uracis imbuta*.

In the forest clearings, we saw many giant helicopter damselflies (*Mecistogaster* and *Megaloprepus*). Even Marcelino, our boat driver, caught one with his bare hands! Along the muddy and slippery trails, we found four species of *Palaemnema* perching near the bases of large buttressed trees. Wading in the flowing streams, we found *Perissolestes*, *Philogenia*, *Heteragrion*, and *Argia adamsi*. At the ponds, we caught

spoliatus, and later confirmed with the microscope. Becky said this is probably what she had seen flying in a couple other areas further north of where we were.

Later that same day, I was solo and about 60-70 miles south at Hillside National Wildlife Refuge. While wading knee-deep through a flooded bottomland dominated by water tupelo, black willow, willow oak and bald cypress, I netted a damselfly that was lurking low in a thick stand of *Sparganium* (bur-reed). Once again at the microscope, and in very good company with the Westfall & May book and the MSU entomology department, it turned out to be *Ischnura prognata*. Steve Krotzer verified it a couple weeks later.

In the spirit of keeping the streak alive, I went out the following day (July 19th) and sampled an alder dominated palustrine fringe in the Tombigbee National Forest. I came up with *Argia fumipennis*, another one not on the state list. It made for good drama, but at that point I began to wonder. Could this really be a first for an MS *Argia fumipennis* [It was. Ed.], which even an amateur like myself knows is not all that uncommon.

In an effort to remedy the uncertainty, step one was to check out the insect museum collection at MSU, the Odonata portion being comprised mostly of donated specimens courtesy of W. H. Cross. This turned up no *A. fumipennis*, but I did happen upon a single *D. spoliatus* from Mississippi. Ah-ha! Didn't expect the unexpected. But I noticed that Cross had typed a question mark beside the name. Then I realized this specimen did not resemble my *D. spoliatus*, at least not superficially. Side-by-side comparisons, along with a few *Dromogomphus spinosus* vouchers thrown in for good measure, and Cross's *spoliatus* gradually morphed into a *spinosus*, primarily due to obvious differences (despite the condition and old age of the specimen) in thoracic striping, femora coloration and club flange. Verification came from Dr. Richard Brown, insect taxonomist, systematist, museum curator and professor at MSU. At that time he recommended that I contact Dr. Paul Lago in Biological Sciences at the University of Mississippi, who is in charge of the "Ole Miss" entomology collection.

Dr. Lago responded to my inquiry by first saying that their archives were "heavy on beetles", but with some Odonata mixed in, including - guess what - vouchers of *A. fumipennis*. More surprisingly, interestingly, and importantly, he kindly directed my attention towards what I am

assuming is a little known paper (Lago *et al.*, 1979), since it had been published in the Journal of the Mississippi Academy of Sciences, which I liken to a "gray publication", or one not reaching the scientific community at large. The authors examined 887 specimens total from various collectors and collections and came up with 35 damselfly species for the state, *I. prognata* not being one of them. It lists 11 counties in which 97 specimens of *A. fumipennis* had been gathered. From a quick skim through it seems there are some really good species records in there. Since the DSA MS list now contains 23 damselfly species counting the new *I. prognata* and also Steve Krotzer's *Telebasis byersi* caught Aug 4th, the Lago paper would significantly upgrade the overall state list (It'd put us ahead of Louisiana!).

As a final check for MS records of the *I. prognata* and *D. spoliatus*, I spoke with the Mississippi Museum of Natural Science but they turned up neither species.

Working with this dragonfly survey has certainly helped enhance personal resourcefulness. It was fun to re-identify something that had been misidentified. It was reassuring to do a background check for any previous state records of those three species. I think that when you're a beginner you're not only learning and taking notes on things like proper diagnostic features for effective ID'ing, you're also learning to take notes of caution when drawing any conclusions.

(Added Note: With regards to the MSU insect museum, Dr. Brown and I are currently computer databasing the collection, starting with Odonata. Hopefully we'll soon be able to know an exact quantity of voucher specimens and have a quick-easy reference tool for anyone interested!)

Reference:

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DAMSELFLY "PANCAKE NET" MADE WITH FIBERGLASS SCREENING MATERIAL

Paul Lederer, 33 Hamden Avenue, Staten island, NY 10306, (718) 987-1576

The heart of the book is the keys to species and species descriptions (larvae are keyed to genus). The book is lavishly illustrated, with 460 line drawings and wing scans. State maps show the distribution of all the species in Ohio, and the descriptive accounts includes generous information on the natural history of each species. There are 88 color photos of adults (mainly from Clark Shiffer's excellent collection). The serious amateur anywhere in the northeastern United States and eastern Canada will find that this book will serve as the only reference needed for almost all species encountered in a wide region. It is an excellent accomplishment.

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DRAGONFLIES: THEY'RE RAVENOUS, A LITTLE SCARY AND OH-SO-HELPFUL

Bugs have an appetite for pests and no real drawbacks, experts say

Michael E. Young (from theThe Dallas Morning News 21 July 2002) myoung@dallasnews.com

Forget Eight Legged Freaks and say hello to the Six Legged Carnivores – zooming aerial acrobats and nonstop eating machines that, despite their name, are really, really nice.

OK, they do scare the daylights out of kids (and many adults). But dragonflies, bursting forth in amazing numbers in this somewhat soggy year, are that rarity in the natural world: They come with virtually no downside.

"From the time they hatch to the time they die, they're eating something, and it's always something they've caught," said James Lasswell, a senior research associate in entomology at Texas A&M University's Stephenville extension center.

"They eat gnats and mosquitoes and flies. They love mosquito larvae. They're great things to have."

And this year, we have them, in ample numbers.

For that, thank the bounteous rains and the temporary pools and patches of standing water. They're just perfect for at least a couple of dragonfly species that are buzzing around suburban neighborhoods and open land right now, eating every bug in sight.

"What you're seeing now are the flights of the Wandering Glider and a similar dragonfly, the

Spot-winged Glider," Mr. Lasswell said. "Both lay their eggs in temporary pools and such. And this year, they've had ample opportunity to lay their eggs."

Some dragonflies have drawn-out life cycles, spending as much as five years in the naiad stage before reaching adulthood and flying away. But not these two gliders.

"With these, the cycles are very short," Mr. Lasswell said. "On farms and ranches, you'll find their larvae in stock tanks – not stock ponds, but the metal tanks. You'll even find them in birdbaths. Their life cycle is very quick."

And that means they live lives of great purpose – feeding and mating, laying eggs, then perhaps mating again for another brood. There's no time to waste.

"We just got a letter from a man in San Antonio who said he was watching thousands of them migrating – and the Wandering Glider does migrate, in response to what, we're not sure.

"It might be to find food, or maybe they're flying toward a thunderstorm in anticipation of having a place to lay eggs," Mr. Lasswell said.

In cities and suburbs, people often see dragonflies in a frenzied swarm, darting and turning seemingly for the fun of it. More likely, Mr. Lasswell said, they're picking up dinner on the fly.

"You'll see them in the late afternoon or early evening, and they've found a bunch of gnats or something else concentrated in that one area, something we can't see," he said. "They'll be zooming around, four, five, six feet off the ground. I've seen fields just completely covered."

Dragonflies eat incredible numbers of insects, making them a valuable summer ally. Best of all, they don't bite, don't sting and don't carry human diseases, Mr. Lasswell said.

"The only thing they do is scare the kids," he said.

That's because they're big and fast and not particularly shy around people. And the buzz of those gossamer wings will send the strongest man swatting.

"We got an e-mail saying they had a dragonfly move in, and now they couldn't use their pool at different times of the day.

"People need to understand they will not hurt you, they don't carry any diseases, they eat other insects, and they're good to have," he said, repeating a well-practiced list of dragonfly virtues.

And, they're very cool.

They were buzzing around before dinosaurs appeared – fossil records show dragonflies with 27-inch wingspans – and except for being much smaller, the basic dragonfly has changed little.

But they can sport color schemes as dazzling as anything in nature.

Dallas and neighboring counties are home to the electric-red Neon Skimmer, the burnt-orange Flame Skimmer, the orange and black Halloween Pennant and the vivid green and blue Eastern Pondhawk.

"If you look for them, you'll see them," Mr. Lasswell said. "This is a peak time for dragonflies. There are a lot more of the species out now than at any time of the year."

But don't bother catching them for a colorful collection, he warned. When dragonflies die, their colors fade. In death, all dragonflies are gray.

Besides, they're too beneficial to kill. So be kind.

Most of all, "Don't freak out," Mr. Lasswell said.

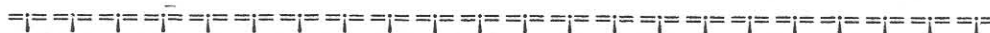
Dragonflies really are nice. Honest.

BULLETIN OF AMERICAN ODONATOLOGY: just published (vol. 6, no. 3)

ODONATA IN THE GREAT PLAINS STATES: PATTERNS OF DISTRIBUTION AND DIVERSITY

ROY J. BECKEMEYER

ABSTRACT: Through the March, 1999 cutoff date of this study, a total of 320 species of dragonflies and damselflies, 73% of the Nearctic fauna, had been recorded as occurring in the 13 states comprising the Great Plains of the United States. These species are listed together with the Great Plains states in which they occur and the larger biogeographic region to which they belong. A significant latitudinal gradient in species richness was found to be present in the central Great Plains, with 194 species in Texas and 55 in North Dakota. A suite of similarity and diversity measure were mapped to visually display patterns of relationships of the state faunas. This process led to the identity of four faunal groups in the central Great Plains: Texas; Kansas - Oklahoma; Nebraska - South Dakota - Colorado - Iowa; and North Dakota. In terms of Nearctic biogeographical affinities, 43% of the Great Plains odonate fauna is of eastern origin. The large number of tropical species (42) in Texas contributes 14% of the Great Plains total. Northern transcontinental, western, south-western, transcontinental, and central groups contribute 11%, 9%, 8%, 8%, and 7%, respectively. The Great Plains is home to major faunal boundaries and regions of overlap, many occurring in the central tier of states from Oklahoma north through North Dakota. The Bicks' 1957 assertion that the 32 to 36 inch precipitation isolines correlated with the area of overlap of eastern and western species groups in Oklahoma appears to hold true for Kansas as well.



TRAMEA

With all the discussion about migrating *Anax junius* recently, we all should consult the North American Dragonfly Migration Project: <http://members.bellatlantic.net/~dbarber/migrant/mig.html>

Idaho is now represented by a website: <http://imnh.isu.edu/digitalatlas/bio/insects/drgnfly/dragfrm.htm>
This is the "Digital Atlas of Idaho Dragonflies". Written by Mark Lung and Stefan Sommer, it has an introduction to dragonflies, an Idaho checklist, a family tree, visual key and glossary.

A dragonfly site for Denmark is http://home1.stofanet.dk/erland_refling/danish_dragonflies.htm. It is written by Erland R. Nielsen, Kolding, Denmark

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Vol. 14, No. 3, 25 Sept. 2002

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