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ARGIA

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Front cover: A boulder at the Gold Lake outlet in the Oregon Cascades with 13 resting male *Octogomphus specularis* (Grappletail) visible (also a tandem pair and male *Argia vivida* [Vivid Dancer]). See article on page 7. Photo by Jim Johnson.

In This Issue

This issue brings to a close another year and as a result many articles reporting new records or summarizing the finds of 2009. We also have reports from a couple of regional meetings. Scott King tells us about the fun had at the fourth annual Minnesota dragonfly gathering and Steve Gordon relays the adventures of the tenth annual Oregon *Aeshna* Blitz. The 2009 GLOM gathering was held at Indiana Dunes National Lakeshore and Bob DuBois passes on the highlights.

Andrew and Eugene McCaul share an interesting odonate mating strategy they witnessed. They found and photographed a male-male-female coupling of *Hagenius brevistylus* (Dragonhunter). This doesn't beat Fred Sibley's observation in 2007 of two different species of *Sympetrum* (Meadowhawks) and a *Perithemis tenera* (Eastern Amberwing) all strung together, but perhaps the McCaul's have the record for most biomass.

Jim Johnson reports on the phenomenal numbers of *Octogomphus specularis* (Grappletail) at one location in Oregon which were enjoyed by many during the DSA Annual Meeting in 2008 (see cover of this issue). As if the numbers of individuals themselves wasn't impressive enough, he also follows up on an unusual tail-dipping behavior seen in females of this species.

Also from the Northwest, Cary Kerst reports on an interesting deformity he found in a female *Aeshna sitchensis* (Zigzag Darner). He also discusses the color change (darkening) that occurs in a number of species of *Argia* during copulation and tandem pairing.

Sue and John Gregoire summarize their ongoing observations of the emergence of *Celithemis elisa* (Calico Pennant) in the Finger Lakes Highlands of New York. They've accumulated five years worth of data now. Long-term studies like this are essential for understanding temporal patterns. It's a shame such studies are not more common.

As mentioned earlier, there are a plethora of new records reported in this issue. We have no less than four new state records from four different states (Alabama, Arizona, New Mexico and Texas) to report. All are from the southern US. Jane Walker and crew couldn't let the new report of *Nehalennia gracilis* (Sphagnum Sprite) from Texas in the previous issue stand on its own, so they rediscovered this species in Missouri. This now makes two disjunct populations west of the Mississippi River. There almost certainly have to be others.

Jerrell Daigle hit pay dirt in the Florida Keys finding no less than six species of *Tramea* (Saddlebags) in one spot. Chip Krilowicz and Jeff Lubchansky report on the many new county records for New Jersey that they have found over the last five years of looking. Burton Cebulski reports on a newly discovered population of *Hetaerina titia* (Smoky Rubyspot) in southern Michigan.

Not to be outdone by those in the US, Paul Catling and others report on several new records from Sable Island, Nova Scotia and Pierre and Claudine Guezennec report a new species for Guadeloupe.

Finally, the Arizona crew is at it again. This time, Rich Bailowitz, Doug Danforth, and Pierre Deviche made a trip to west Mexico where they turned up a number of good finds. Two particularly interesting ones included the recently described *Leptobasis guanacaste* and the relatively rare *Leptobasis melinogaster* (Cream-tipped Swampdamselfly), which hadn't been seen in Mexico since its original description.

I wish everyone a wonderful holiday season and hope that you are able to use the cool weather to get caught up on processing specimens and photos. I know I personally have a lot calling for my attention. 

Calendar of Events

For additional information, see <<http://www.odonatacentral.org/index.php/PageAction.get/name/DSAOtherMeetings>>.

Event	Date	Location	Contact
2010 DSA Annual Meeting	24–27 Jun 2010	Orono, Maine	Bryan Pfeiffer, < Bryan@WingsEnvironmental.com >
1st European Cong. on Odonat.	2–5 Jul 2010	Portugal	< http://www.europeandragonflies.com/ >
2011 Int. Congress of Odonat.	19–24 July 2011	Odawara, Japan	< http://www.odonata.jp/wda2011/ > 

Fourth Annual Minnesota Dragonfly Gathering at Shalom Hill Farm near Jeffers, Minnesota

Scott King, Northfield, Minnesota <kings@rconnect.com>

This year's gathering was led by Dianne Rowse and took place at Shalom Hill Farm in southwestern Minnesota, 17–18 July. A total of 19 people took part in this year's gathering. As part of the Minnesota Odonata Survey Project, the annual gathering serves several purposes, a social event for project volunteers, an introduction to the collection and identification of the Odonata for new volunteers, and a chance to survey some overlooked areas of the state. Cottonwood County, where we were gathered, certainly qualified, having only seven species of dragonflies on record, and no damselflies.

After several days of low clouds, wind, and temperatures in the 50s, the weather improved throughout the weekend, from a first glimpse of sun Friday night, to a cloudless and warm morning on Sunday. Most of the collecting occurred Saturday, with outings to nearby Little Swan Lake Wildfowl Production Area and Bat Lake Wildlife Management Area in the morning, and ranging out a bit farther to Mound Creek County Park in neighboring Brown County. The sun came out for nearly a full half-hour at Bat Lake, and the dragonflies really began to fly. Several of us marched out into the tall grass of a field overlooking the wetland, equally spaced as during a deer drive only armed with nets instead of guns. In the middle, Mike Garcia kicked up *Tramea lacerata* (Black Saddlebags) that flew out then circled back toward him. The rest of us watched as Mike made as valiant an effort as perhaps anyone has ever made to net a flying bug, net fully extended, he swung and dove in a single graceful motion, missing only by inches, perhaps even brushing the wing tips; it was the kind of effort highlighted weekly by television replays during football season, but something rarely witnessed or documented in the field, especially the long grass field of the prairie.

More highlights came that afternoon, when nine year old Elsa

Soderstrom, the youngest of the group, netted *Enallagma antennatum* (Rainbow Bluet) and Bob Marr, from Michigan, netted *Perithemis tenera* (Eastern Amberwing). That evening, after a few hours spent processing collected Odonata, after a home-cooked, farm-fresh supper, we hiked the surrounding prairie, plying our way through tall grass and blooming native flowers to a buffalo rock about a mile out from the farm. This rock, a large chunk of Sioux quartzite, had been polished by thousands of years of wind and by thousands of years of bison rubbing their shoulders against it to remove thick winter hair. Edges and points shone like deep red glass, and we reached and touched those places, one after another, where it seemed time itself had turned to stone.

Sunday morning, after packing up, we made one last outing to nearby Augusta Lake Wildlife Management Area. Nick Muller, a local farmer, followed us, curious about our caravan of cars in this sparsely populated place. After hearing about the survey and seeing some of the damselflies we had netted, he jumped in his pickup and left.



Front and center: Elsa Soderstrom. First row: Lisa Gelvin-Innvaer, Mary Stefansky, Jeff Soderstrom, Jeanne Jensen, Janet Kortuem. Back row: Joanne Husby, Dianne Rowse, Janet Marr, Bob Marr, Brian Stefansky, Warren (Doug) Stucki, Scott King, Bob Beck. Not pictured are Amber Achterhoff, Michael Garcia, Bob Jensen, Melissa Radel, Kane Radel.

Minutes later he returned and invited us to visit one of his properties, to look at a pond where, he was happy to report, dragonflies were flying. This turned out to be a splendid site: a man-made pond with an island, a calcareous fen at the base of the bluff to the south, and the spring from the fen feeding a small cattail wetland below the pond.

Skimmers were flying, *Enallagma hageni* (Hagen's Bluets) were mating and depositing eggs, *Enallagma carunculatum* (Tule Bluets) were emerging, the tenerals glittered in the surrounding grass, *Erythemis simplicicollis* (Eastern Pondhawk) was netted, and, in the small pool of the fen where the spring bubbled up, *Amphiagrion* sp. (Red Damsels) were found. Nick Muller and his daughter stood by, looking quite pleased and proud, enjoying the activity and attention, even sharing stories a few stories. We learned about the huge farmhouse that once stood here having 14 bedrooms and about a woman who drank water from the spring her whole life and who lived well into her nineties. We listened, as the farmer explained, with obvious relish, about a failed attempt to remove the small island from the pond by using dynamite! The stories, the dragonflies, the blue sky overhead, all made for a gregarious and fit end to our weekend gathering.

Cottonwood County Species List

- * Slender Spreadwing, *Lestes rectangularis*
- * Lyre-tipped Spreadwing, *Lestes unguiculatus*
- * (E.) Red Damselfly, *Amphiagrion* sp.
- * Taiga Bluet, *Coenagrion resolutum*
- * Tule Bluet, *Enallagma carunculatum*
- * Familiar Bluet, *Enallagma civile*

- * Hagen's Bluet, *Enallagma hageni*
- * Eastern Forktail, *Ischnura verticalis*
- * Sedge Sprite, *Nehalennia irene*
- * Halloween Pennant, *Celithemis eponina*
- * Eastern Pondhawk, *Erythemis simplicicollis*
- * Dot-tailed Whiteface, *Leucorrhinia intacta*
- Widow Skimmer, *Libellula luctuosa*
- Twelve-spotted Skimmer, *Libellula pulchella*
- Common Whitetail, *Plathemis lydia*
- * Ruby Meadowhawk, *Sympetrum rubicundulum*
- * Saffron-winged Meadowhawk, *Sympetrum costiferum*
- Cherry-faced Meadowhawk, *Sympetrum internum*
- White-faced Meadowhawk, *Sympetrum obtrusum*
- Variegated Meadowhawk, *Sympetrum corruptum*
- Black Saddlebags (observed), *Tramea lacerata*

Brown County Species List

- Lyre-tipped Spreadwing, *Lestes unguiculatus*
- * Rainbow Bluet, *Enallagma antennatum*
- * Familiar Bluet, *Enallagma civile*
- * Hagen's Bluet, *Enallagma hageni*
- * Eastern Forktail, *Ischnura verticalis*
- * Sedge Sprite, *Nehalennia irene*
- Variable Darner, *Aeshna interrupta*
- Widow Skimmer, *Libellula luctuosa*
- Twelve-spotted Skimmer, *Libellula pulchella*
- * Eastern Amberwing, *Perithemis tenera*
- Common Whitetail (photographed), *Plathemis lydia*
- White-faced Meadowhawk, *Sympetrum obtrusum*
- * Saffron-winged Meadowhawk, *Sympetrum costiferum*

* indicates county record



The Tenth Annual Oregon *Aeshna* Blitz: October in August

Steve Gordon <scfgordon24@comcast.net>

Like the saying goes about fishin', the same goes about dragonflyin': "The worst day of dragonflyin' is still better than the best day at work!" That is, unless your work is dragonflyin' when every day is great. The Tenth Annual Oregon *Aeshna* Blitz was a testament to that saying. After extensive planning resulting in no plan, several official committee meetings where no one attended and no notes were kept, and a series of silent votes, the 2009 Blitz was scheduled for 14–16 August at Camas Prairie, Wasco County, one of only three sites known in Oregon for Subarctic Darner (*Aeshna subarctica*) and the one with the biggest population. Enthusiasm ran high among the seven attendees: Jim Johnson, Cary Kerst, Joe Higbee, Bob Hamilton, and the three Steves—Berliner, Gordon, and Valley.

Cary and Steve Gordon headed out a day early on Thursday to stop at Wintler Park in Vancouver, Washington, to try to photograph Olive Clubtail (*Stylurus olivaceus*) females. Under cool and very windy conditions they found about eight males in a morning of hard looking. By the time they reached South Prairie in Skamania County, Washington, it was cooler and windier. They spotted only a Striped Meadowhawk (*Sympetrum pallipes*) on Thursday evening. The highlight of an overnight camping stay was a flock of Red Crossbills that came to feed in the cold ashes within an old campfire ring. As they broke camp Friday morning, a cold, steady drizzle fell from dark gray clouds. As they headed south, they met Jim Johnson headed up the mountain into the storm. Subsequent stops along the Columbia River were not productive under strong, steady

winds that make the Columbia famous for wind surfing, but not for odonating.

The group of seven rendezvoused at Camas Prairie in the late afternoon on the 14th. Unsure about fire regulations, the group huddled in camp chairs around a campfire ring and dreamed of warmer evenings. Some resorted to wrapping sleeping bags around them as wind blew in the treetops and storm clouds zoomed overhead. Any chance of photographing the heavens was lost. A nearby spot of private land in the Mt. Hood National Forest sported a corral, a number of cows, and one enormous, bellowing bull that wandered up and down the road and around the edge of the camp. His presence and our unease was the fodder for many tall tales around the imaginary campfire.

Saturday morning was cold and windy. By 10:30 AM a few *Sympetrum pallipes* and Canada Darners (*Aeshna canadensis*) could be seen near the camp. Across the corral we could see the grasses in the prairie bent horizontal in the wind. In camp, we watched a Bald-faced Hornet kill a *S. pallipes*, dismember it and fly off with its thorax. During the following hour, two ants toted off the head and one or two ants toiled with the abdomen. At 11:30 AM we ventured into the extensive Camas Prairie where we found many Canada and Variable Darners: *A. canadensis* and *A. interrupta*, but no *A. subarctica*. After three and one-half hours of slog-ging through wet prairie and bog, we logged ten species of

odonates. The carnivorous sundew plants, wild cranberries, a family of Sandhill Cranes with one colt, and a Virginia Rail were the day's highlights. We all changed into relatively warm, dry socks and shoes. That evening a campfire was lit, tall tales were told, and some of the seven still wrapped up in sleeping bags. Clear skies allowed experimental photographs of the Milky Way. The cold weather in August felt like a camping trip in October.

Sunday started a bit warmer and darners darted over Camas Prairie. All Blitz members got to photograph or net *A. subarctica*, our target species, and Jim "Hoover" Johnson found a Brush-tipped Emerald, (*Somatochlora walshii*). As the party broke up, we all remarked that summer in the Oregon mountains can be like that. However, none of our other Oregon mountain Blitzes could compare with this cold.

On the way home on Monday the 17th, Cary and Steve Gordon stopped along the Crooked River at Smith Rocks State Park, Deschutes County, and photographed River Bluet (*Enallagma anna*). A stop on the Old McKenzie Pass Highway at a small roadside lake resulted in Crimson-ringed Whiteface (*Leucorrhinia glacialis*) and Ringed Emerald (*Somatochlora albicincta*). By trip's end the Blitz total species list was twenty-nine. While cold, windy weather hampered dragonfly activity, the Blitz was deemed a success—remember that famous saying. 

GLOM 2009 Visits Indiana Dunes National Lakeshore

Bob DuBois <robert.dubois@wisconsin.gov> and **Burton C. Cebulski** <bcebul@tc3net.com>

The 9th Annual Great Lakes Odonata Meeting was held during 10–12 July at the Indiana Dunes National Lakeshore (IDNL) with special help from the Shirley Hines Land Trust. Located at the southern tip of Lake Michigan, IDNL is an ecologically diverse landscape having interdunal ponds (pannes) and wetlands, marshes, minerotrophic fens, wet prairie meadows, ponds, and river reaches. We visited interesting habitats at Cowles Bog, Dune Creek, Howe's Prairie, the Little Calumet River, Miller's Woods, Pinhook Bog and West Beach. We were treated to a fascinating keynote talk by Dr. James Curry, and also had short talks by presenters from Illinois, Ohio, and Wisconsin. Good food, excellent accommodations and fine camaraderie were enjoyed by 33 folks from five states and the province of Ontario. Special thanks to Deb Mikasser, Yvette Liautaud, Kathy Kozacky, Linda Seyler, and George Smolka for organizing a fine event!

The IDNL and nearby lands had not previously received much attention from odonatologists. In the only exception

to this in my knowledge, Smolka et al. (1999) surveyed a number of sites in Lake and Porter counties (including IDNL) from 1993–1997. They documented 60 species of Anisoptera and Zygoptera in the region. Our group recorded 42 species, including eight not found by Smolka et al. (1999). These were *Argia tibialis* (Blue-tipped Dancer) and *Boyeria vinosa* (Fawn Darner) at the Little Calumet River, *Nehalennia gracilis* (Sphagnum Sprite), *Cordulia shurtleffii* (American Emerald) (see below), *Dorocordulia libera* (Racket-tailed Emerald), and *Nannothemis bella* (Elfin Skimmer) at Pinhook Bog, *Anax longipes* at Miller's Woods and Howe's Prairie, and *Somatochlora linearis* at the grounds of the Indiana Dunes Environmental Learning Center. The *C. shurtleffii* record evidently would be a first for Indiana. Several males were observed in flight and a female was seen ovipositing, but this record was not confirmed with a photograph or specimen. If you would like more information about this record, contact Craig Stettner <stettne@harpercollege.edu> or Ilka Milne <boghaunter@yahoo.com>.



GLOM 2010 will be held near Columbus, Ohio, 9–11 July. Key sites will be Big Darby and Little Darby Creeks, both of which have good water quality, and both are State and National Scenic Rivers <<http://www.dnr.state.oh.us/watercraft/sr/tabid/2558/Default.aspx>> and were listed by the Nature Conservancy as one of the nation's Last Great Places. A photograph-only visit to Cedar Bog Nature Preserve is also being planned. As with previous GLOMs, the event will feature expert-led field outings to interesting sites during the days and short, easily digestible talks during the evenings, along with plenty of time to socialize in a relaxed setting. Mark your calendars now for what promises to be an enjoyable event. Contact Bob Glotzhober (<bglotzhober@ohiohistory.org>; phone 614-298-2054) for more information or if you would like to give a presentation. Eric Pilgrim will be helping lead the event. Further event details will be forthcoming

in the next issue of ARGIA. Previous GLOMs, beginning in 2001, were held at Elliot Lake, Ontario; Roscommon, Michigan; Finland, Minnesota; Northeast Ohio; the Rainy River District, Ontario; Grantsburg, Wisconsin; Volo Bog, Illinois; and Munising, Michigan.

Literature Cited

Smolka, G.E., P.M. Stewart, and T.O. Swinford. 1999. Distribution of odonates (dragonflies and damselflies) in the Indiana Dunes National Lakeshore and nearby lands. *Natural Areas Journal* 19: 132–141. 

Snow Dragonfly!

<<http://www.continuetolearn.uiowa.edu/lakesidelab/images/dragonfly.jpg>>

Minutes of the 2009 Annual Meeting of the Dragonfly Society of the Americas

Jerrell J. Daigle <jdaigle@netally.com>, Acting Secretary with help from Kathy Kozacky and Yvette Liautaud

The annual meeting of the Dragonfly Society of the Americas was held on Saturday, 20 June 2009, at the St. Anthony Catholic Church in Sullivan, Missouri, with President Bill Mauffray presiding.

Host introductions and welcoming statements were given by Paul McKenzie, Tim Vogt, Jane C. Walker.

Bill Mauffray gave opening remarks and statement of thanks to the hosts. Attending members introduced themselves.

There were 48 participants at the 2009 DSA meeting:

Jerrell J. Daigle, Bill Mauffray, JVO and Sharon Weaver from Florida

Yvette Liautaud, Kathy Kozacky, Meredith Mahoney,
 Richard Day, Ken and Glenna Thompson, Cindy
 McKee, Tim Cashatt, and Dale Hallett from Illinois
 David Allan Fitch from Massachusetts
 Ailsa and Nick Donnelly, Peggy and Fred Sibley, Jason
 Bried, and Ed Lam from New York
 Greg Lasley, John Abbott, Will Wagner, Frank and
 Teresa Davis from Texas
 Mike Blust and Bryan Pfeiffer from Vermont
 Dennis Paulson from Washington
 Ken Tennessen, Bob DuBois, and Bill Smith from
 Wisconsin
 Bob Glotzhober and Erik Pilgrim from Ohio
 Burton and Kerry Cebulski from Michigan
 Bob Thomas from Arkansas
 Marion Dobbs from Georgia
 Richard Groover from Virginia
 Steve Hummel from Iowa
 Joe Smentowski, Jane C. Walker, Linden Trial, Paul
 McKenzie, Tim Vogt, John F. Belshe, and Brett
 Landwer from Missouri
 Cindy and Peter Allen from the United Kingdom

Reading of the 2008 Annual Meeting Minutes was waived
 and the minutes were approved as published in ARGIA
 Vol. 20, No. 3.

Jerrell J. Daigle handed out the meeting buttons.

Steve Hummel reported on the recent officer election
 results. Greg Lasley was elected Regular Member and
 Steve Hummel the President-Elect.

Treasurer's Report by Jerrell J. Daigle: We began the 2009
 year with a balance forward of \$16,867.26. Our current
 balance is \$20,994.26. Our projected year-end balance
 should be about \$14,000. Currently, we have a DSA
 membership of 333. Both our 990 Tax Exempt form and
 8734 Non-Profit Organization status were approved by
 IRS last year. It is anticipated that income and expenses
 will be lower in 2009 due to the new cost structure of
 available cheaper electronic versions of ARGIA and BAO,
 enabling us to finance the Nick and Ailsa Donnelly fel-
 lowship. The final 2009 Budget Report is included in this
 issue of ARGIA.

Bryan Pfeiffer gave a presentation proposing the 2010
 DSA Annual Meeting be held in Maine. The proposal
 was voted on and approved.

Jerrell J. Daigle announced tentative plans for the 2010
 Southeastern meeting in Panhandle Florida.

Bryan Pfeiffer announced tentative plans for the 2010

Northeastern meeting in New Hampshire.

Yvette Liautaud announced the upcoming July GLOM at
 the Indiana Dunes National Lakeshore.

Bob Glotzhober mentioned that the Ohio Chapter will
 have its 2010 meeting in March.

Dennis Paulson mentioned the NW listserve.

Bill Mauffray gave a report about the International
 Odonata Research Institute and invited everyone to visit
 it in Gainesville, Florida.

Ken Tennessen (Associate Editor) reported on Bulletin of
 American Odonatology (BAO). BAO now accepts short
 notes and reports and is available in electronic PDF format.

John Abbott gave a report about the OdonataCentral.org
 web site which has more than 900 registered users.

Dennis Paulson reported on the Checklist Committee.

Jason Bried and Richard Groover were recipients of The
 2009 Nick and Ailsa Donnelly Fellowships.

Greg Lasley took the group photo during the break. 

2009 Treasurer's Report

Jerrell J. Daigle, DSA Treasurer <jdaigle@nettally.
 com>

We began the 2009 year with a balance forward
 of \$16,867.26. Our current balance is \$19,246.94.
 Our projected year-end balance should be about
 \$18,000. Currently, we have a DSA membership
 of about 370. It is anticipated that income and
 expenses will be lower in 2009 due to the new cost
 structure of available cheaper electronic versions of
 ARGIA. Our expenses were for printing issues of
 2009 ARGIA, Bulletin of American Odonatology,
 and the 2009 Donnelly fellowships.

Mysterious Behavior: Tail-dipping Female *Octogomphus specularis* (Grappletail)

Jim Johnson, Vancouver, Washington, <jt_johnson@comcast.net>

Gold Lake outlet/Salt Creek head in the Oregon Cascades near Willamette Pass harbors a large population of *Octogomphus specularis* (Grappletail). At their peak, the density of individuals at the outlet and immediate area is staggering for a dragonfly, matched in my experience only in certain circumstances such as heavy migrational concentrations and when large numbers seek shade in extremely hot, sunny conditions. Even in those cases, gomphids are rarely if ever involved. It really has to be witnessed to be appreciated.

The high density of individuals at this location in and of itself is very interesting, but it gets better. During the Dragonfly Society of the Americas annual meeting last year in Oregon, Nick Donnelly visited Gold Lake and witnessed previously unreported behavior: a female *Octogomphus* perching on the side of a rock with only the tip of her abdomen in the water. She appeared to be ovipositing in this way although the normal mode for this species (and most gomphids and many other dragonflies) is to drop eggs on the surface of water while in flight. See Nick's report in ARGIA 20(3): 17–18.

On 17 July 2009 I visited Gold Lake to photograph some odonates and spent time at the outlet to see the *Octogomphus* which is always fun. I think there were more there than during any other visit that I have made. I'd say there were easily four dozen right at the outlet flying around and sitting on rocks and logs, plus countless more in the nearby parking lot, campground, on the bridge, on my vehicle, on my hat, etc. It seemed like one or two copulating pairs flushed from every tree that I walked past. I photographed boulders in the outlet with multiple resting *Octogomphus*—the highest number in one shot was 13 (see cover photo).

It didn't take long to start noticing females perching on the sides of rocks and logs with just the tip of the abdomen in the water, just like Nick Donnelly reported the previous year. I saw around 15 instances of this behavior and I photographed ten of them. A few photos are reproduced here as well on my web site at <<http://odonata.bogfoot.net/photo-pages/tail-dipping-Octogomphus.htm>>.

I may have seen eggs drifting away from the abdomen in one case, but because of the suspended material in the water flowing out of the lake and because of the viewing conditions, I couldn't be sure. I don't see any readily apparent eggs in any of my photos. I observed one female make a short typical ovipositing flight, tapping her abdomen on the water surface right after "dipping" from the side of a log. Several times I was able to predict this behavior when I saw females making low, short, back-and-forth flights along the side of a log or boulder before she perched on the side. One female performed this behavior from twigs sticking out of the water from a submerged tree branch.

There are a couple of obvious questions for which there are no



apparent answers at this time:

1. Are these females ovipositing, and if not, what are they doing?
2. Is this behavior a product of living in such high density (e.g. covert oviposition in order to avoid harassment by the many males nearby) or is it normal behavior which was only noticed at Gold Lake simply because there are so many readily observable females in one location?

After describing my observations on a couple of listserves, Steve Rottenborn responded that he had observed this behavior from a female *Octogomphus* on a small stream in Santa Clara County, California on 12 July 2009. The density of individuals was quite low (perhaps more normal for the species over most of its range), so this suggests that the behavior is not related to population density.

Dennis Paulson mentioned that many gomphid eggs have threads which adhere them to the substrate as they drift downstream, and perhaps this behavior is related to that (loosening up the threads, maybe). I was so focused on photographing these females that I didn't net any of them to see if they were extruding eggs or not. In hindsight, that would have been a good idea. Of course, the imagination can run wild while speculating on such behavior—maybe they're just cooling off the rear end after a long day of copulating and egg-laying. Who knows?

Perhaps this behavior is found in other gomphids as well, but because of relatively low population densities among most species it is not easy to observe. This is something everyone can watch for while in the field.



Color Change in Male *Argia nahuana* (Aztec Dancer) in Tandem Pairs

Cary Kerst <cary_k@comcast.net>

I traveled to a site (Twentymile Creek) in south-central Oregon this past summer to photograph *Argia nahuana* (Aztec Dancer). Jim Johnson and Steve Valley (Johnson & Valley, 2005) discovered this species in Oregon at a spring which is only perhaps 30-feet long and flows into Twentymile Creek. This remains the only spot in Oregon where the species has been found. Mature males of *A. nahuana* typically have a bright blue patterned thorax, postocular spots, frons and blue abdominal pattern. I observed a tandem pair but did not photograph them as the color of the male did not seem typical. The blue colors of the head and thorax were a dull purple color rather than the normal bright blue. After observing another similarly colored tandem pair, I realized that I was observing color change in males during copulation. Males of most of the tandem

pairs that I observed were similarly colored. I did notice a pair with a male of the normal blue color, and another one with a male that was somewhat intermediate. These may have been recent pairings, and males might require more time to darken.

Darkening of males in tandem pairs has been documented in several species of *Argia* (Lam, 2004; Paulson, 2009a). Males of both *A. sedula* (Blue-ringed Dancer) and *A. apicalis* (Blue-fronted Dancer) darken during copulation, and blue form females of *A. moesta* (Powdered Dancer) also darken. Darkening of males during copulation has also been observed in *A. vivida* (Vivid Dancer). *Argia translata* (Dusky Dancer) males actually lighten during copulation developing whitish sides and antehumeral

stripes (Paulson, 2009a). The darker male colors may lessen harassment of tandem pairs by single males, and/or make the tandem pair less conspicuous to predators (Lam, 2004; Paulson, 2009b). The darker color would seem to provide some selective advantage as the tandem male is less mobile and often positioned rigidly erect above the perching or ovipositing female.

I collected a couple of tandem pairs of *A. nahuana* with dark males and placed them in envelopes where the males changed back to the normal bright blue color. After cooling during the night, the males darkened to a color similar to that during copulation. However, the abdomen of the males had also darkened during cooling. It has often been postulated that the darker colors are advantageous for odonates when cold with limited ability to escape predators.

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[Editor: *Argia plana* (Springwater Dancer) males also darken when in copula.] 



A Deformity in a Female *Aeshna sitchensis* (Zigzag Darner) from Washington

Cary Kerst <cary_k@comcast.net>

I visited Bunchgrass Meadows in northeastern Washington from 30 July to 1 August this past summer. Bunchgrass Meadows is a large wet meadow/*Sphagnum* bog and patterned fen at 5,000 feet elevation and is just 21 miles south of the Canadian border. Jim Johnson and I were there to photograph some of the unusual *Somatochlora* (Emeralds) found in the area, including *S. franklini* (Delicate Emerald) and *S. whitehousei* (Whitehouse's Emerald). We also found *S. semicircularis* (Mountain Emerald), *S. minor* (Ocellated Emerald), and *S. walshii* (Brush-tipped Emerald) making this spot a bit of *Somatochlora* heaven! In fact, Dennis Paulson informs us that all of the *Somatochlora* found in Washington have now been found at this site.

While at the meadows, I netted a flying, tandem pair of *Aeshna sitchensis* (Zigzag Darners), a species that is com-



mon at this site. When I examined them, I realized that the abdomen of the female was upside down with the ovipositor on top. The female appeared to be mature so apparently was able to feed and function with this deformity. The abdomen may have twisted during emergence, but it appeared more likely that segments three and four of the abdomen were malformed. Obviously though, this pair were not going to achieve a wheel position! 

Dragonhunter (*Hagenius brevistylus*) Mating Trio

Andrew McCaul <asm@stormshooter.com> and Eugene McCaul, Jr. <eugene@stormshooter.com>

Trios of mating dragonflies are apparently rare, although Sibley (2007) has reported seeing male-male-female trios in the genus *Leucorrhinia*. Photographs of such unusual mating behaviors also appear to be uncommon. On 15 August 2009, we witnessed a male-male-female mating trio at Hays Nature Preserve near Huntsville, Alabama, involving three members of the large clubtail species *Hagenius brevistylus* (Dragonhunter), and were able to obtain some limited photographic documentation of the incident.

At approximately noon, while walking along the paved path on the south side of the Flint River, one of us (EM), noticed a large insect or group of insects flying into the trees on the south side of the river, about 20 m to our north. To investigate further, we approached the area cautiously, and noticed a trio of *H. brevistylus* dangling from vines in the trees about twelve feet above the ground. We slowly navigated on foot around the scene, trying to take photographs without disturbing the trio. Lighting levels were low in the forest, making it difficult to acquire sharp images using a handheld camera. Our best image of the trio was made as a silhouette against the sky.

Although we never attempted to capture the trio, we were able to positively identify them as the large species *H. brevistylus*, which is common to the area in midsummer. As the photograph shows, the assembly consisted of two males leading a female. The two males clasped a small vine for support while the female dangled freely below, held around the neck by the second male's cerci. At no time did we see the trio in a true wheel formation. We do not know how long they stayed there because they remained

perched and motionless, even as we departed the scene several minutes later.

Literature Cited

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Three *H. brevistylus* in tandem, with two males leading a female, as seen near Huntsville, Alabama, on 15 August 2009. Photo by Eugene McCaul, Jr.

Shift in *Celithemis elisa* (Calico Pennant) Emergence Strategy

Sue and John Gregoire, Kestrel Haven Avian Migration Observatory, Burdett, NY 14818 <khmo@empacc.net>

For the past four years we have conducted daily counts of *Celithemis elisa* (Calico Pennant) emerging from a pond on our property (Finger Lakes Highlands of New York State). Each year the emergence strategy was to emerge in very large numbers (by the thousands) during a five-day period in the first two weeks of June then drop precipitously to small amounts over the rest of the long emergence period. Because they emerged in such astonishing numbers en masse we published a note in *ARGIA* each year, with the promise to keep watching and reporting our observations. (*ARGIA* 19[1]: 10–11; 20[1]: 14–15; 20[3]: 13).

This year the population seems to have shifted its strategy. Although they emerged over a slightly longer period, the overall numbers were very low compared to what they were in previous seasons, and the highest five-day period produced only a fraction of the percentage demonstrated in earlier years. Not only did they emerge in lower numbers during that early June period, they chose to emerge in spurts throughout the season.

The total reached only 1505, far below the 8237 from the 2008 season, and the percentage of emergence during the

usual burst period was only 15% compared to 76% in 2008.

While overall numbers of Odonata in the area were lower than usual, the counts of *C. elisa* were still very high for any one species to emerge from a small (30 × 40 meter) pond. We have suspected that the population would stabilize someday, but we were woefully disappointed in the precipitous decline.

Celithemis elisa is known to be an early colonizing species of new ponds. This pond was in its 6th year when we began our once a day counts and is now in its 10th year. Our goal is to continue to watch as the population stabilizes, further crashes or even grows.

The table below illustrates the results of our daily counts from each year:

	2005	2006	2007	2008	2009
Season Total	2,455	10,944	6,497	8,237	1,505
Peak Emergence Period	7–11 June	5–9 June	1–6 June	8–12 June	6–10 June
Peak Percentage of Total	83% (2,028)	47% (5,169)	75% (4,892)	76% (6,244)	15% (229)
Total Emergence Period	>62 days	63 days	61 days	64 days	68 days



Sympetrum pallipes (Striped Meadowhawk): A New Texas State Record

Jerry K. Hatfield <dragonflywatcher1029@yahoo.com>

Among the five new records documented for Lubbock County, Texas this season (2009) which includes *Argia fumipennis violacea* (Violet Dancer), *Ischnura barberi* (Desert Forktail), *Dythemis nigrescens* (Black Setwing), and *Pseudoleon superbus* (Filigree Skimmer), is an unlikely candidate: *Sympetrum pallipes* (Striped Meadowhawk). This uncommon surprise is a significant discovery due to the fact that it is mainly a western US species, and it has never before been reported in Lubbock County or the state of Texas! I observed one male *S. pallipes* on 2 September 2009 at 1332 hrs on the Llano Estacado Audubon Society Trail of Buffalo Springs Lake, Texas.



New Records of Odonata from Sable Island, Nova Scotia

P.M. Catling <catlingp@agr.gc.ca>, Z. Lucas, B. Freedman, and P. Brunelle

Wright (1969) reported seven species of Odonata, including *Anax junius* (Common Green Darner), *Enallagma civile* (Familiar Bluet), *Ischnura verticalis* (Eastern Forktail), *Lestes congener* (Spotted Spreadwing), *Pantala flavescens* (Wandering Glider), *P. hymenaea* (Spot-winged Glider), *Sympetrum corruptum* (Variegated Meadowhawk), and *S. internum* (Cherry-faced Meadowhawk), from Sable Island (43.9319° N, 059.9985° W), located 160 km southeast of Canso, Nova Scotia. Most of these were also mapped by Donnelly (2004a, b, c) and his mapping added *Lestes unguiculatus* (Lyre-tipped Spreadwing) and *Sympetrum rubicundulum* (Ruby Meadowhawk).

In 2008 and 2009 we collected and observed Odonata on the island. *Anax junius*, *Enallagma civile*, *Ischnura verticalis*,

Pantala flavescens, *P. hymenaea*, *Sympetrum corruptum*, and *S. internum* were all frequent. *Lestes congener*, *L. unguiculatus* and *Sympetrum rubicundulum* were not seen. However, three species were observed—*Ischnura hastata* (Citrine Forktail), *Tramea carolina* (Carolina Saddlebags), and *T. lacerata* (Black Saddlebags), that were new to the Maritime Provinces of Canada and/or to Sable Island. These three additions are discussed in the following paragraphs. All are species known to be transported over substantial distances by wind and all are likely spreading northward in North America. The odonate fauna of Sable Island now includes 12 species, of which we have seen museum specimens for all except *Lestes congener*, *L. unguiculatus*, *Sympetrum rubicundulum*, and *Tramea carolina*. There is no particular reason to doubt any of these latter records.

***Ischnura hastata* (Say 1839), Citrine Forktail**

Three individuals (all males) were found in Baltic Rush (*Juncus balticus*) and Large Cranberry (*Vaccinium macrocarpon*) vegetation at the edge of a shallow pool at the east end of Mummichog Pond (43.9323° N, 060.0243° W) near West Light on 26 August 2009. The wide range of this cosmopolitan species is thought to be at least partly due to extensive dispersal by wind (Dunkle, 1990; Catling, 2008). This is the first record for the Maritime Provinces of Canada and for Nova Scotia and extends the range northeast by approximately 450 miles (730 km) from Thomaston Township, Knox County, Maine (Atlantic Dragonfly Inventory Program [ADIP], Maine Damselfly and Dragonfly Survey [MDDS]). *Ischnura hastata* appears to be extending northward elsewhere in eastern North America (Lam, 2004; Catling, 2008).

***Tramea carolina* (Linnaeus 1763), Carolina Saddlebags**

A female of this species was observed at West 2 Pond (43.9286° N, 060.0082° W) for 20 minutes during the late morning on a warm sunny day of 30 July 2008. The insect was observed for 10 minutes by Catling, Lucas and Freedman, and dropped at least 50 eggs into the slightly brackish pond. The abdomen was bright red with a solid black tip and the hindwing markings were unmistakable, and were key to verifying the identity of the insect, which was not captured. This is the northernmost record for this species, which is previously known from southern Ontario and southern mainland Nova Scotia (Donnelly, 2004a; ADIP). It is a common migrant along the Atlantic coast, occasionally reaching as far north as coastal Maine (MDDS).

***Tramea lacerata* Hagen 1861, Black Saddlebags**

Four individuals of this species, two patrolling males and a pair in tandem with a female laying eggs, were found at Polygonum East Pond (43.9319° N, 059.9701° W) on 3 August 2008. One male was captured and photographed and placed in CNCI. In Canada, this species is known from British Columbia, Ontario, Quebec, and Nova Scotia (Donnelly, 2004b; Catling et al., 2005), and interestingly, the first specimen for Nova Scotia (Bridgehouse, 2008) was collected only five days earlier (28 July 2008) than our observations on Sable Island, suggesting that migration of the species was substantial and extended further to the northeast in 2008 than was previously observed. *Tramea lacerata* often occurs with *Anax junius* in migratory concentrations in southwestern Ontario and is believed to be expanding its range northward (Catling & Brownell, 1998; Bracken & Lewis, 2002).

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Another Interesting Saddlebags from Arizona

Rich Bailowitz and Doug Danforth <danforthdg@aol.com>

The ponds of the lowlands of central Arizona, mostly along the Gila River Valley, have proved to be hotbeds of diversity for the genus *Tramea* (saddlebags). In addition to the two common species, Red Saddlebags (*T. onusta*) and Black Saddlebags (*T. lacerata*), at least two other species occur in numbers irregularly.

Striped Saddlebags (*T. calverti*) has been found at ponds and wide spots in the Gila River, from west of Phoenix to near Safford. Peak numbers were recorded in early September of 2007 when upwards of a dozen were seen in a day at Roper Lake, Graham County. Antillean Saddlebags (*T. insularis*) has also been found in the fall for four of the past five seasons between Kearny and Safford, both along the Gila River. Peak daily numbers for this species include four individuals in mid-November of 2006 and ± 10 individuals in late September of 2009.

On 25 September 2009, Doug Danforth, Sandy Upson, and Rich Bailowitz visited the two pieces (Roper and Dankworth Ponds) of Roper Lake State Park. Although numbers of individuals were not overwhelming, diversity was high on this day. A total of 37 species was recorded from the Park. Only one *Tramea* species was common, that being *T. lacerata*. D. Danforth then photographed an individual (see attached photo) of what appeared to be a blackish saddlebags but with a small, smooth-edged saddle. The specimen could not be caught and disappeared shortly. A visit two days later failed to turn up the specimen.

Upon subsequent examination of the photos, and conferring with Dennis Paulson and Sid Dunkle, the general con-



sensus is that this is a specimen of a young male *Tramea binotata* (Sooty Saddlebags). Juvenile males are apparently red, becoming pruinose black as they mature. The photographed specimen is black on the face, thorax, and last three segments of the abdomen. The remainder of the abdomen is "midnight red". The long cerci eliminates a melanistic *T. calverti* as a possibility and the fact that segments 8–10 are solid black would appear to eliminate a dark *T. insularis*. Dennis Paulson, in personal communication, cites the hamules shapes as consistent with those of *T. binotata*.

There are presently no known records of this species in the United States other than those of southern Florida. We welcome any information, comments, or suggestions about this sighting; responses can be sent to Rich Bailowitz at <raberg2@q.com>.



A New Species Record for Alabama

Steve Krotzer, 2238 Haysop Church Road, Centreville, AL 35042 <rskrotze@southernco.com>

On 24 September 2009, I visited several locations in the Conecuh National Forest, Covington County, Alabama to photograph odonates. One locality was Yellow Hill Pond, a small, shallow, fishless pond located within the Open Pond Recreation Area (31° 05.40' N, 086° 33.38' W). This site is a high-quality habitat in the extreme southern portion of the state; in particular, it has a large breeding population of *Lestes vidua* (Carolina Spreadwing), which is very rare in Alabama.

While photographing *L. vidua* and the occasional *L. australis* (Southern Spreadwing), I encountered a female les-

tid that did not appear to be either of these species. This specimen unfortunately disappeared before I could get any photographs or observe it in detail. However, shortly afterward the mystery was solved when I observed, photographed, and vouchered a mature male *Lestes forficula* (Rainpool Spreadwing) (see back cover of this issue). Over the next several hours I saw at least a dozen males of the species, along with several females and at least one tandem pair ovipositing. During a return visit on 1 October, four or five males were observed in about an hour. I have been to this locality often over the past ten years, and I have never seen any evidence of the presence of this species.

As documented by several authors, *Lestes forficula*, which at one time was apparently restricted in the United States to south Texas (Abbott, 2006), seems to be expanding its range to the east. It has recently been reported from Mississippi (Bried & Krotzer, 2005), Louisiana (Strickland & Strickland, 2007), and the panhandle of Florida (Paulson, 2009). Alabama can now be added to the list.

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First Record of *Tauriphila australis* Hagen (Garnet Glider) for Guadeloupe (FWI)

Pierre and Claudine Guezennec, Société d'Histoire Naturelle L'Herminier, Muséum d'Histoire Naturelle, 12 rue Voltaire, 44000 Nantes, France <pierre.guezennec@shnlh.org>

On 28 September 2009, a single male specimen of *Tauriphila australis* (Garnet Glider) was observed at “Mare Castex”, near Petit-Canal on Grande-Terre of Guadeloupe. The identification was later confirmed by François Meurgey. This quite docile individual was observed hanging on a tree, and photographed at different angles. The habitat consists of a wide temporary pond, invaded by Water Hyacinth (*Eichhornia crassipes*) and lies in the middle of an agricultural plain.

Tauriphila australis is known in the Greater Antilles from the Cayman Islands, Cuba, Hispaniola and Puerto Rico. In the Lesser Antilles, this species was reported for the first time in Martinique in March 2005 (Meurgey, 2005), where populations are now well established in four sites.

Both in Guadeloupe and Martinique, the preferred habitat for *T. australis* consists of large to very large coastal marshes and ponds, almost entirely covered with Water Hyacinth. A common companion species is *Miathyria marcella* (Hyacinth Glider).

This new island record brings the Guadeloupean checklist to 37 species. Future surveys of “Mare Castex” and other similar habitats in Guadeloupe will be carried out in hopes of furthering our knowledge on this species.

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Cannaphila insularis (Gray-waisted Skimmer), a New Genus/Species for New Mexico

Martin Reid 11500 Huebner Road #1605, San Antonio, TX 78230 <upupa@airmail.net>

I had spent the morning of 5 August 2009 looking for odonates on the Pecos River just below where it flows out of Red Bluff Reservoir, Reeves/Loving counties, Texas. A look at the map revealed that Rattlesnake Springs, New Mexico was only 55 miles distant, so I drove west and north to the state line, then nine miles into New Mexico to the turning for Rattlesnake Springs, part of Carlsbad Caverns National Park. I arrived at the actual spring at 12:30 local time, to find a crystal clear spring bubbling up into a small square pond surrounded on three sides by light woodland, and with two small outflows. One outflow was a cement-lined narrow channel running in the open from the northeast corner of the pond, and the second outflow was a natural small stream

flowing through fairly dense bushes and tall cane, out of the southeast corner of the pond.

The first odonate on the stream was a male Comanche Skimmer (*Libellula comanche*)—immediately followed by a mature male Gray-waisted Skimmer (*Cannaphila insularis*)! I spent some time working carefully to photograph this individual, wondering if it might be *C. vibex* rather than *insularis*. I then finally moved further downstream, only to discover that within about the first 40 yards of the flow there were a minimum of six *Cannaphila* males on territory. I spent some time photographing more of these males, then returned to the spring pond to try

to photograph Arroyo Darners (*Rhionaeschna dugesi*) that were patrolling the pond.

As I worked my way slowly around the far side of the pond, under some tall trees that were shading the edge of the pond, I flushed a skimmer that flew a short distance away and upwards, finally perching in the shade about 20 feet from the ground—it was a mature-looking female *Cannaphila*, of which I obtained a reasonable photograph. I made a couple more trips along the stream, seeing readily the male *Cannaphilas* each time as they interacted with each other and with male *L. comanche*; at one point there were three male *Cannaphila* perched within one foot of each other, and I managed to get a photograph of two males perched six inches apart.

Needham, Westfall, and May (2000) covers both *insularis* and *vibex*, and it became clear from examining my photos

that all the males had the single cell between the start of the central anal loop vein and the corner of the triangle, diagnostic for *insularis* (*vibex* has two cells at this position).

Prior to this current discovery *C. insularis* was known within the United States only from south Texas, the northernmost records being from Travis (Austin), Bexar (San Antonio), and Val Verde (35 miles north of Del Rio) Counties; this latter location—Devils River State Natural Area, being the farthest west that they were previously known. Thus this new discovery is a range extension of 411 km to the northwest for this species.

Literature Cited

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West Mexico Updated

Rich Bailowitz <raberg2@q.com>, **Doug Danforth** <danforthdg@aol.com> and **Pierre Deviche** <Pierre.Deviche@asu.edu>

In the course of writing an upcoming publication on the odonates of Arizona and Sonora (Bailowitz, Upson, & Danforth, in prep.), satisfactory photographs in the wild of a handful of difficult-to-find species were found to be lacking. Danforth suggested that a trip farther south along Mexico's west coast would be fruitful for several, if not all, of the missing species. The trip was originally scheduled for April 2009. It was postponed due to concerns over Mexico's H1N1 flu outbreak and rescheduled for 1–5 October. The plan was to fly into Mazatlán, Sinaloa, rent a car, and drive approximately four hours south to the vicinity of San Blas, Nayarit. Sandy Upson could not participate but we had the company of Dr. Pierre Deviche of Arizona State University.

Although only one of the target species, *Brachymesia herbida* (Tawny Pennant), was encountered and photographed, the trip proved to be extremely fruitful in other ways, highlighted by the discovery of a species new to Mexico. Stops were made and photographs taken at the following locations:

- 1 1 October 2009, a shallow, muddy, slow-moving stream with overstory and densely wooded, shrubby banks at Aguaje de Castilla south of Villa Union, Sinaloa, 23° 09.58' N, 106° 09.19' W, elev 70 ft.
- 2 2 October 2009, an open, clear, rocky stream with moderate current and densely vegetated banks cross-

ing Hwy 15 at Puente Rincon del Verde, Sinaloa, 22° 54.52' N, 105° 48.34' W, elev 209 ft.

- 3 2 October 2009, a shallow roadside wetland dominated by water lilies and a tall *Thalia* sp. along Hwy 15 south of Acaponeta, Nayarit, 22° 25.67' N, 105° 24.48' W, elev 27 ft.
- 4 2 October 2009, a rocky stream in a ravine that alternately ran through a cleared agricultural section and a shaded, forested area along Hwy 54 ENE of San Blas, Nayarit, 21° 39.27' N, 105° 06.91' W, elev 224 ft.
- 5 2 October 2009, a flooded pasture of herbaceous vegetation with some bulrush and shrubs along Crocodilian Rd, just off the coastal hwy SE of San Blas, Nayarit, 21° 31.49' N, 105° 13.48' W, elev 21 ft.
- 6 3 October 2009, an open, rocky stream with occasional canopied sections and thick vegetation on the banks at La Palma, Nayarit, 21° 29.53' N, 105° 10.25' W, elev 183 ft.
- 7 3 October 2009, small jungle stream coming down a steep forested hillside near Jolobamba, SE of Santa Cruz, Nayarit, 21° 24.15' N, 105° 10.72' W, elev 194 ft.
- 8 4 October 2009, freshwater coastal marsh covered with *Pistia* sp. at Santa Cruz, Nayarit, 21° 26.42' N,

105° 11.49' W, elev 11 ft.

- 9 4 October 2009, a roadside *Pistia*-covered pond and rocky, open, swift-flowing stream at Singayta, Nayarit, 21° 34.42' N, 105° 13.65' W, elev 55 ft.
- 10 4 October 2009, a small, slow-flowing stream, sometimes in the open, sometimes with a dense overhead canopy, near La Campaña, Sinaloa, 22° 41.47' N, 105° 36.40' W, elev 14 ft.
- 11 5 October 2009, a seasonal, shallow pond with a barren, muddy shoreline, surrounded by thornscrub near the North Mazatlán marina, Sinaloa, 23° 16.30' N, 106° 27.14' W, elev 36 ft.

Species found are listed below and annotated where necessary. Starred species (*) are of special note. Discussion follows.

Hetaerina occisa Hagen: 4, 6, 9

Hetaerina titia (Drury) (Smoky Rubyspot): 2, 4, 9. New record for Sinaloa.

Archilestes grandis (Rambur) (Great Spreadwing): 2. Only a single individual on the trip.

Lestes sigma Calvert (Chalky Spreadwing): 11. A single teneral individual on the trip.

Mecistogaster ornata Rambur: 7. A single individual on the trip.

Palaemnema domina Calvert (Desert Shadowdamsel): 6

Protoneura cara Calvert (Orange-tipped Threadtail): 6, 9, 10. New record for Sinaloa.

Apanisagrion lais (Brauer) (Black-and-white Damsel): 7. A single individual on the trip.

Argia extranea (Hagen) (Spine-tipped Dancer): 7, 8.

Argia harknessi Calvert (Harkness' Dancer): 9. A single individual on the trip.

Argia oculata Hagen: 1, 4, 6, 7. New record for Sinaloa.

Argia oenea Hagen (Fiery-eyed Dancer): 4, 6

Argia pulla Hagen: 1, 2, 4, 6, 8, 9, 10.

Argia tezpi Calvert (Tezpi Dancer): 2, 4, 6, 9, 10.

Enallagma civile (Hagen) (Familiar Bluet): 11.

Enallagma novaehispaniae Calvert (Neotropical Bluet): 4, 6.

Ischnura capreolus (Hagen): 3. One male and one female on the trip.

Ischnura hastata (Say) (Citrine Forktail): 3, 5, 8, 10, 11.

Ischnura ramburii (Selys) (Rambur's

Forktail): 2, 5, 8, 9, 10, 11.

* *Leptobasis guanacaste* Paulson: 10. Two individuals were seen and one male definitively photographed. This recently described species (Paulson, 2009) was heretofore known only from two locations in Costa Rica and represents a new record for Sinaloa and for Mexico as well as a significant northward range extension for the species (Figure 1).

* *Leptobasis melinogaster* González-Soriano (Creamy-tipped Shadowdamsel): 1, 10. These represent a new record for Sinaloa and a new species for the west-central coast of Mexico since it was previously known in the country only from Jalisco and Oaxaca (González-Soriano, 2002). It also represents the first confirmation of this species in Mexico since its original description (D. Paulson, pers. comm.) (Figure 2).

Leptobasis vacillans Hagen (Red-tipped Swampdamsel): 3, 5, 10.

Telebasis filiola (Perty) (Striped Firetail): 8, 9.

Telebasis levis Garrison: 9. Three individuals at this site.

A recently described taxon by R. Garrison (2009).

Telebasis salva (Hagen) (Desert Firetail): 1, 2, 3, 4, 5, 8.

Anax junius (Drury) (Common Green Darner): 5, 11.

Rhionaeschna psilus (Calvert) (Turquoise-tipped Darner): 1, 10.

Phyllocycla elongata (Selys): 9. A single individual on the trip.

Phyllogomphoides apiculatus Cook & Gonzalez: 6. Two individuals at this site.

Phyllogomphoides pacificus (Selys): 7. A single individual on the trip.

Brachymesia herbida (Gundlach) (Tawny Pennant): 5. A single individual on the trip.

Brechmorhoga praecox (Hagen) (Slender Clubskimmer): 6. Two individuals at this site.

Dythemis nigrescens Calvert (Black Setwing): 1, 2, 4, 9.

Dythemis sterilis Hagen: 1, 2, 4, 5, 6, 8, 9, 10.



Figure 1. *Leptobasis guanacaste*.



Figure 2. *Leptobasis melinogaster*; Ejido Aguaje de Castilla, Sinaloa.

Erythemis attala (Selys) (Black Pondhawk): 9. As many as six individuals at this site.

* *Erythemis haematogastra* (Burmeister): 2, 4. Definitive photographs taken. These are the first records for western Mexico and, specifically, for Sinaloa and Nayarit (Figure 3).

Erythemis plebeja (Burmeister) (Pin-tailed Pondhawk): 3, 5, 11.

Erythemis vesiculosa (Fabricius) (Great Pondhawk): 1, 2, 3, 4, 5, 6, 9, 10, 11.

Erythrodiplax basifusca (Calvert) (Plateau Dragonlet): 3. A single teneral individual on the trip.

Erythrodiplax funerea (Hagen) (Black-winged Dragonlet): 1, 2, 3, 4, 5, 6, 9, 11.

Libellula croceipennis Selys: 8. A single individual on the trip.

Macrothemis hemichlora (Burmeister): 1. Two females flew short beats in a clearing. Although it is known from the west Mexico states of Colima, Michoacan, and Oaxaca, a female identified as this species in Nayarit in 2001 was later determined to be *M. pseudimitans*. First record for Sinaloa.

Macrothemis inacuta Calvert (Straw-colored Sylph): 2, 4.

Macrothemis pseudimitans Calvert (White-tailed Sylph): 2, 6. First record for Sinaloa.

Miathyria marcella (Selys) (Hyacinth Glider): 5, 9.

Miathyria simplex (Rambur): 9. As many as six individuals at this site.

Micrathyria aequalis (Hagen) (Spot-tailed Dasher): 1, 2, 3, 4, 5, 8, 9, 10, 11.

Micrathyria didyma (Selys) (Three-striped Dasher): 1, 5, 7.

* *Micrathyria dissocians* Calvert: 9. Definitive photographs taken. This is a first record for west-central Mexico and specifically for Nayarit. Three adults seen in partial shade (Figure 4).

Micrathyria hagenii Kirby (Thornbush Dasher): 11.

Orthemis discolor (Burmeister) (Carmine Skimmer): 1, 2, 4, 5, 6, 7, 8, 10, 11.

Orthemis ferruginea (Fabricius) (Roseate Skimmer): 1, 2, 3, 4, 5, 8, 10, 11.

Orthemis levis Calvert: 1, 4, 10.

Pantala flavescens (Fabricius) (Wandering Glider): 2, 3, 4, 5, 6, 8, 11.

Pantala hymenaea (Say) (Spot-winged Glider): 2, 8, 11.

Perithemis domitia (Drury) (Slough Amberwing): 1, 2, 4, 8, 10.

Perithemis intensa Kirby (Mexican Amberwing): 1, 10.

Pseudoleon superbus (Hagen) (Filigree Skimmer): 1, 2, 4, 6.

Tauriphila australis (Hagen) (Garnet Glider): 9. A single individual on the trip.

Tramea calverti Muttikowski (Striped Saddlebags): 11. Several individuals here.

Tramea lacerata Hagen (Black Saddlebags): 1. A single individual on the trip. First record for Sinaloa.

Tramea onusta Hagen (Red Saddlebags): 2, 3, 5, 6, 9, 11.



Figure 3. *Erythemis haematogastra*; stream east of San Blas.

Discussion

The west-central coast of Mexico has been surveyed for odonates as part of larger works dealing with the Odonata of Nayarit and other neighboring states in general. This paper adds two species to those previously known for Nayarit bringing the total to 122. It also adds eight new Sinaloa records, bringing that state's total to 79 species. Sinaloa's total, with 130 species from Sonora to its north (Bailowitz et. al., in prep), and Nayarit's total of 122 to its south, is expected to rise considerably with additional field work.

On the five day trip, we tallied 62 species of odonates (25 zygopterans and 37 anisopterans) for the coastal region between Mazatlán in southern Sinaloa and San Blas in central Nayarit. The 62 species included 12 species (19.7%) of which only a single individual was seen. These somewhat limited numbers were partly due to our remaining below 300 ft the entire time, in an effort to photograph several species that are scarce or vagrants to Arizona and Sonora but more regular southward in Mexico. These species include *Anax amazili* (Amazon Darner), *Coryphaeschna adnexa* (Blue-faced Darner), *Gynacantha nervosa* (Twilight Darner), *Brachymesia herbida*, and *Tholymis citrina* (Evening Skimmer).

Previous "recent" surveys were done in late August 1965 and mid September 2001 by Dennis Paulson (2002). The early October date of the present trip may have caused us to miss many aeshnids (only two species seen compared to nine by Paulson) and gomphids (only three species seen compared to eight by Paulson) although this is also easily attributable to yearly variation. But, in turn, the late season allowed us to capitalize on somewhat

drier weather which was apparently conducive to stream intermittence and therefore *Leptobasis* flights, three species being seen. The later season also might have allowed species with Antillean affinities—*Erythemis baematogastra* and *Micrathyria dissocians*, to wander to and/or colonize the west-Mexican coast (weather system-driven) where they had not previously been reported. It should be noted that this October drying trend and subsequent decrease in species richness appears to reverse diversity increases early in the rainy season reported by Dunkle (1976) in the same geographic region.

A total of 39 odonate species was recorded by us in Sinaloa, 14 zygopterans and 25 anisopterans. In all, 51 species of odonates were recorded in Nayarit of which 20 were zygopterans and 31 were anisopterans. The 25 species of damselflies (40.3%) and 37 species of dragonflies (59.7%) closely parallel the 153 species of damsels (42.5%) and 207 species of dragons (57.5%) found nationally in Mexico (Paulson & González-Soriano, 2009).

Acknowledgements

We are grateful to Dennis Paulson for comments on an early draft of the manuscript.

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Figure 4. *Micrathyria dissocians*.

Nehalennia gracilis (Sphagnum Sprite) Found in Missouri: No Longer a Historical Record

Jane C. Walker <j.walker_smentowski@yahoo.com>; Paul M. McKenzie <Paul_McKenzie@fws.gov>; Joseph H. Smentowski

Around 79 years ago E.B. Williamson made several trips to the Missouri Ozarks to visit friends and collect odonates. These trips took place in the summer and fall of 1929 and 1930. While he did most of collecting in the watersheds of the Current and Jacks Fork Rivers in Carter County, he also visited a total of 12 counties over the two summers and collected 68 species. An account of these trips can be found in Williamson (1932).

On two occasions during the summer of 1930 Williamson visited a small wetland in Shannon County on 25 and 28 July. He collected three male *Nehalennia gracilis* each day in what he described as “boiling hot sun” (Williamson, 1932). *Nehalennia gracilis* (Sphagnum Sprite) has not been seen or collected in Missouri since that time.

While conducting surveys for *Somatochlora hineana* (Hine’s Emerald), Joe Smentowski and Jane Walker rediscovered *Nehalennia gracilis* on a privately owned fen near Salem, Dent County, Missouri on 3 July. At 0800 hours CDT they no sooner began their survey, when Joe pointed out a small, dark damselfly with a blue-tipped abdomen. After three attempts, Jane finally caught a male. The damselfly was flying below knee level amid the sedges. They saw several more of these tiny damselflies throughout the morning, but as the sun dried the dew in the fen, the larger and more numerous *Argia bipunctulata* (Seepage Dancer) became active and was more conspicuous than the smaller *Nehalennia*.

Not having much experience with the *Nehalennia* genus, Jane assumed she had collected an *Enallagma* species. After arriving home later that evening, she tried to identify the tiny damselfly, but could not make it fit any *Enallagma* species. Being very tired, she decided to sleep on it and try again in the morning. The “aha” moment came in the middle of the night. What if it was a *Nehalennia*? In the morning Jane rechecked all her books and identified the specimen as *Nehalennia gracilis*. Jane wondered if this was the same *Nehalennia* that Williamson collected in the Ozarks. Checking Williamson’s paper, she found that he had collected *N. gracilis* in Shannon County, Missouri in the summer of 1930. In evaluating Williamson’s (1932) collections of *Nehalennia gracilis* in Shannon County in 1930, Tim Vogt and Brett Landwer independently determined that the location of this collection site was along Highway F near Eminence. Jane and Joe’s collection in

Dent County is approximately 41 miles to the northwest of the historical site in Shannon County. Jane called Paul McKenzie with the news. He was excited about the find and suggested they return to collect a few more specimens to send off to Nick Donnelly for verification.

The following week on 7 July, Joe and Jane returned to the fen where they initially captured *N. gracilis*. They arrived late in the afternoon and collected another male around 1800 hours CDT. The next morning, 8 July, they were joined by Paul McKenzie to help document the *N. gracilis* and the diverse plant community in this fen. Finding *Somatochlora hineana* was also a good possibility as all the necessary habitat characteristics were present. We entered the fen at 0745 hours CDT and encountered *N. gracilis* almost immediately. Most of the fen was still in full shade and the plants were heavy with dew. As we walked through the fen, the tiny damselfly flew up around our knees. Jane collected a male and female *N. gracilis* and Paul collected a male *Ischnura hastata*. At 0800 hours Paul started walking across the fen counting *N. gracilis*. Within 15 minutes he counted 23 males.

Shortly after Paul’s updated count, we saw a *Somatochlora* sp. fly over in a fast feeding flight. Joe followed it to an open field adjacent to the fen where several dragonflies were feeding. Joe was soon joined by Jane and within a few minutes Joe caught a female *Somatochlora linearis*. Of curious note, Paul noticed and confirmed an observation Joe had made on our first trip to this fen, the feeding swarm of dragonflies were apparently following a group of swallows and Chimney Swifts feeding above the dragonflies. As the swallows began feeding, the dragonflies were observed also foraging directly below them. As the swallows and swifts moved across the field, so did the dragonflies, and finally, when the swallows left the field, the dragonfly feeding swarm dissipated. These odonate swarms were initially made up of *Somatochlora linearis* and *Somatochlora* sp., but were subsequently replaced by *Epithea princeps* (Prince Baskettail), *Tramea lacerata* (Black Saddlebags), and *Pantala* sp.

By 0830 hours the count of *Nehalennia* was 32 males and two females. Paul moved south and east of the fen to continue counting *N. gracilis* and discovered a second smaller, deep-muck fen. This fen was more graminoid in nature and more open. Due to the abundance of crayfish burrows,

this fen was considered prime habitat for *Somatochlora hineana*. Jane joined Paul and they continued looking for *N. gracilis* and *S. hineana* through the field to the southeast and to an alder thicket that lined a small drainage. On the other side of the drainage we found two more small, graminoid, deep-muck fens that provided habitat for *S. hineana*. Neither *N. gracilis* nor *S. hineana* were observed on these three smaller fens.

By the end of our survey of 8 July Paul had counted 46 males and seven females that was in addition to the five males and two females Jane and Joe had collected during their three initial visits. In addition to the odonates mentioned earlier, we observed *Cordulegaster obliqua* (Arrowhead Spiketail), *Celithemis elisa* (Calico Pennant), *C. fasciata* (Banded Pennant), and *Pachydiplax longipennis* (Blue Dasher). Across the road was a spring fed fen where we observed three *N. gracilis* flying among the sedges and *Sagittaria* sp. at the edge of the road. Although an inability to gain permission to survey this fen precluded further survey efforts for *N. gracilis* at this site, we are confident that the species is likely scattered throughout the fen.

On the following day, 9 July, Joe and Jane returned to the fen to further search for *Somatochlora hineana* and map the other fens they had found. Jane and Joe observed the same phenomenon with the swallows and odonate feeding swarms as noted on 8 July by Jane, Joe, and Paul. Although *N. gracilis* were again noted throughout the fen, no *S. hineana* were observed. Because this site has potential for *S. hineana*, additional surveys will be conducted in 2010. Upon arriving home on 9 July, Jane mailed off male and female specimens of *N. gracilis* to Nick Donnelly for verification. Nick confirmed the identification of *Nehalennia gracilis* and commented that this population was like other disjunct populations in the southern part of this species' distribution.

The rediscovery of *Nehalennia gracilis* in Missouri represents another, more southern, disjunct population of this species. Donnelly (2004) reported that the range of *N. gracilis* to be primarily northern in New England and the upper Midwest with disjunct populations in the south in Alabama and Florida. Greg Lasley and John Abbott discovered *N. gracilis* in eastern Texas in June of 2009 (Lasley

& Abbott, 2009). The Texas and Missouri discoveries represent the only two populations of *N. gracilis* west of the Mississippi River. Unlike the typical habit of sphagnum bogs, *N. gracilis* was observed in the Dent County fen flying among the sedges and other forbs typical for fens in the Missouri Ozarks. The population of *N. gracilis* at the Dent County site appeared numerous and well distributed throughout the fen. Jane observed one pair in copula, as well as numerous territorial male on male encounters. According to the US Fish and Wildlife Service's National Wetland Inventory maps, the Salem area of Dent county is surrounded by many fens or PEMBs (palustrine areas with emergent vegetation and saturated soils), especially in the Spring Creek watershed. PEMB designations have been useful in identifying potential fens and *Somatochlora hineana* sites (McKenzie, 2006). Next summer we will focus on the wetland signatures in this area to search for more populations of *N. gracilis* as well as attempt to look at what may be the original site where Williamson originally collected the species (Williamson, 1932).

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Tramea Treasure Island

Jerrell J. Daigle <Jdaigle@netally.com>

I went to Middle Torch Key for a short odonate survey 6–7 October 2009. After checking in with the refuge staff on Big Pine Key, I checked out the hammock depressions on

Big Pine Key for *Lestes spumarius* (Antillean Spreadwing) and *Nehalennia minuta* (Tropical Sprite). No such luck! This time all the sites were flooded and I did not find any

adults in the open or hiding in the surrounding forest. Maybe the flooding scattered them wide and far. I then headed for the little hut managed now by John Beck and retired for the night.

In the morning I went to No Name Key to look for dragonflies at the now famous buttonwood pond discovered by Fred Sibley a few years ago. Wow! Things were jumping as soon as I got there. At little hammock pools surrounding the large marl pond, I found lots of *Lestes spumarius*, including mated pairs. At one tiny forest pool, and on the pond itself, I was totally surprised to find *Micrathyria didyma* (Three-striped Dasher) perching on branches. I saw several males and got two for the record. I also saw several *Tramea* and I got one. To my surprise it was *Tramea abdominalis*! This is the first time I ever caught one in Florida. I did get some in Guadeloupe a couple of years ago.

The next day, I went to the Sonny McCoy Indigenous Park on Key West. Not much on the small algae coated pond except turtles and a couple of *Orthemis ferruginea*, *O. schmidt*, and *Erythemis vesiculosa*. I decided to do the tourist thing then. I went to the end of the road to the famous 0 mile point marker and walked the beach with the many tourists. This was the southernmost point in the USA. Only 90 miles to Cuba! I had always wanted to do this, but never got around to it.

Later that day, I went to the Key West Botanical Garden on Stock Island. *Orthemis schmidt* Buchholz with its glossy, scarlet abdomen was common at the newly constructed pond at the Garden. Several of the *O. schmidt* females exhibited a wide range of thoracic patterns, even resembling *O. discolor* and *O. sulphurata* females. Even more surprising were the myriads of *Tramea* flying all

over the place! I saw *Tramea abdominalis*, *T. calverti*, *T. carolina*, *T. insularis*, *T. lacerata*, and *T. onusta*! That is an incredible six species in one spot! A real Treasure Island of *Tramea*! It was a lot of fun and I can't wait to go back this winter! Maybe I can get the rare *Tramea binotata*! Wish me luck!

Key West Botanical Garden Species List

Anax junius (Green Darner—several seen)
Orthemis ferruginea (Roseate Skimmer—several seen)
Orthemis schmidt (abundant)
Tramea abdominalis (Vermilion Saddlebags—few seen)
Tramea calverti (Striped Saddlebags—few seen)
Tramea carolina (Carolina Saddlebags—common)
Tramea insularis (Antillean Saddlebags—fairly common)
Tramea lacerata (Black Saddlebags—few seen)
Tramea onusta (Red Saddlebags—common)
Brachymesia furcata (Red-Tailed Pennant—common)
Erythrodiplax berenice (Seaside Dragonlet—3 seen)
Erythrodiplax umbrata (Band-winged Dragonlet—4 seen)
Erythemis simplicicollis (Eastern Pondhawk—1 seen)
Erythemis vesiculosa (Great Pondhawk—common)
Macrodiplax balteata (Marl Pennant—few seen)
Pantala flavescens (Wandering Glider—1 seen)
Ischnura ramburii (Rambur's Forktail—2 seen)

My thanks to Skip Lazell and John Beck for accommodations on Middle Torch Key, refuge manager Anne Morkill of the Key Deer NWR for the permit, and the folks at the Key West Botanical Garden for permission to survey their grounds. 

Hetaerina titia (Smoky Rubyspot) No Longer Rare in Southern Michigan

Burton C. Cebulski <bcebul@tc3net.com>

Since 1997, Dr. Carl Kaster at Siena Heights University has had students collecting odonates in Lenawee County, Michigan. N. Rogowski, A.L. Tabb and Amanda Swaney have deposited specimens in the Michigan Odonata Survey collection. While looking over Amanda's county survey collection in the fall of 2008, I noticed *Rhionaeschna mutata* (Spatterdock Darner) and *Hetaerina titia* (Smoky Rubyspot) had been misidentified. These two species are both unusual in southern Michigan, *H. titia* being a new county record. I became most interested in *H. titia* because Amanda told me that she had seen these in large numbers. My first thought was that she had seen several *H. americana* (American Rubyspot) and had just happened

to collect a single *H. titia*. *H. titia* was first collected in Michigan in 1980 and only ten had been collected prior to 2009. Amanda had given me good information regarding date and location.

Early in September, I started checking this location and on 5 September, a single male was collected. I was very happy with a catch of what was then thought to be a rare species for Michigan. During the next 14 days, I was able to collect 20 males and four females along the River Raisin. Specimens were collected in each of three counties—Washtenaw, Lenawee, and Monroe. This was nearly 2.5 times the total number in the database. At sites

in Lenawee and Monroe counties it would have been possible to collect this species in great numbers. On 18 September, I posted a note on the Great lakes Odonata web site regarding my success. A day later Darrin O'Brian responded saying that he had collected six males and two females along the Huron River in Wayne and Monroe counties. Darrin has collected a great deal in urban areas and collected the first specimen in Wayne County along the Detroit River in 2008. It always amazes me, given the appearance of most urban rivers that such a beautiful creature can emerge from such an unlikely environment.

In 2008, after finding the male in Amanda's collection, I spoke with Mark O'Brien at the University of Michigan Museum of Zoology about his paper "A new location for *Hetaerina titia* in SE Michigan" in *Williamsonia* 2006 Vol. 10, No. 2. In it, Mark mentioned that he felt *H. titia* was currently undercollected. The northern form is very light and is similar in appearance to *H. americana*. Some collectors may have over looked it thinking it was the more common species. I noted its late and short season in southeast Michigan as another possibility. No matter the reason, it looks as if the Smoky Rubyspot is now a common species in southeast Michigan. 

New County Records for New Jersey

Chip Krilowicz <chippop@verizon.net> and **Jeff Lubchansky** <thelube@verizon.net>

After spending several years in the field chasing Odonata, we have accumulated a number of county records. Records listed were either collected or an acceptable photograph was taken to voucher the record.

New County records taken in New Jersey over the last 5 years. * indicates a new state record. CK = Chip Krilowicz; JL = Jeff Lubchansky.

Scientific Name	Common Name	County	Date	Coll.
<i>Aeshna tuberculifera</i>	Black-tipped Darner	Gloucester	19 Sep 2004	CK
<i>Aeshna umbrosa</i>	Shadow Darner	Salem	29 Sep 2004	CK
"	"	Gloucester	11 Oct 2005	CK
<i>Archilestes grandis</i>	Great Spreadwing	Burlington	9 Sep 2009	CK
<i>Argia apicalis</i>	Blue-fronted Dancer	Salem	29 Jul 2004	CK
"	"	Ocean	24 Jul 2006	JL
<i>Argia sedula</i>	Blue-ringed Dancer	Middlesex	30 Jun 2008	JL
<i>Argia tibialis</i>	Blue-tipped Dancer	Monmouth	6 Jun 2009	JL
"	"	Hunterdon	9 Jul 2006	JL
"	"	Salem	16 Jun 2004	CK
<i>Arigomphus villosipes</i>	Unicorn Clubtail	Camden	7 Jun 2008	CK
<i>Boyeria vinosa</i>	Fawn Darner	Monmouth	19 Jun 2008	JL
<i>Brachymesia gravida</i>	Four-spotted Pennant	Atlantic	17 Jul 2007	CK
<i>Celithemis eponina</i>	Halloween Pennant	Ocean	13 Jul 2005	CK
"	"	Ocean	14 Jul 2006	JL
<i>Celithemis fasciata</i>	Banded Pennant	Monmouth	10 Jul 2009	JL
<i>Cordulegaster diastatops</i>	Delta-spotted Spiketail	Monmouth	24 May 2009	JL
<i>Enallagma basidens</i>	Double-striped Bluet	Camden	18 Jun 2005	JL
"	"	Salem	16 Sep 2005	CK
"	"	Bucks	8 Sep 2008	CK
"	"	Cape May	18 May 2009	CK
"	"	Monmouth	23 Aug 2008	JL
"	"	Ocean	10 Sep 2006	JL
<i>Enallagma civile</i>	Familiar Bluet	Salem	19 Jul 2004	CK
<i>Enallagma divagans</i>	Turquoise Bluet	Salem	18 May 2004	CK
"	"	Union	15 Jun 2006	CK
<i>Enallagma durum</i>	Big Bluet	Monmouth	10 Aug 2008	JL
<i>Enallagma exulans</i>	Stream Bluet	Monmouth	13 May 2007	JL
<i>Enallagma geminatum</i>	Skimming Bluet	Salem	16 Sep 2005	CK
<i>Enallagma laterale</i>	New England Bluet	Ocean	10 May 2006	JL

Table continued...

Scientific Name	Common Name	County	Date	Coll.
<i>Enallagma weewa</i>	Blackwater Bluet	Salem	2 Jul 2006	CK
<i>Epiaschna heros</i>	Swamp Darner	Camden	7 Jun 2004	CK
<i>Epitheca costalis</i>	Slender Baskettail	Gloucester	5 Jun 2007	CK
<i>Epitheca cynosura</i>	Common Baskettail	Camden	13 May 2004	CK
<i>Erythrodiplax minuscula*</i>	Little Blue Dragonlet	Ocean	26 Sep 2005	CK
<i>Gomphaeschna furcillata</i>	Harlequin Darner	Camden	28 May 2004	CK
<i>Gomphus lividus</i>	Ashy Clubtail	Monmouth	2 Jun 2007	JL
<i>Helocordulia uhleri</i>	Uhler's Sundragon	Camden	25 Apr 2008	CK
<i>Ischnura verticalis</i>	Eastern Forktail	Salem	19 May 2004	CK
<i>Ischnura ramburii</i>	Rambur's Forktail	Camden	11 Sep 2008	CK
<i>Lestes congener</i>	Spotted Spreadwing	Camden	28 Sep 2005	CK
"	"	Cape May	5 Oct 2005	CK
"	"	Atlantic	22 Oct 2008	CK
"	"	Cumberland	5 Oct 2005	CK
<i>Lestes forcipatus</i>	Sweetflag Spreadwing	Camden	6 Aug 2006	CK
<i>Lestes inaequalis</i>	Elegant Spreadwing	Union	24 Jun 2006	CK
"	"	Atlantic	14 Jun 2009	CK
"	"	Mercer	28 Jul 2007	JL
"	"	Gloucester	24 May 2008	CK
<i>Lestes rectangularis</i>	Slender Spreadwing	Union	15 Jun 2006	CK
"	"	Gloucester	3 Jul 2008	CK
"	"	Monmouth	3 Aug 2008	JL
"	"	Salem	1 Jun 2004	CK
<i>Lestes vigilax</i>	Swamp Spreadwing	Union	15 Jun 2006	CK
"	"	Monmouth	22 Jul 2006	JL
<i>Libellula auripennis</i>	Golden-winged Skimmer	Ocean	8 Aug 2009	CK
<i>Libellula needhami</i>	Needham's Skimmer	Glocester	18 Jun 2005	JL
<i>Libellula semifasciata</i>	Painted Skimmer	Gloucester	11 May 2004	CK
<i>Libellula vibrans</i>	Great Blue Skimmer	Gloucester	26 Jun 2004	CK
"	"	Salem	29 Jul 2004	CK
"	"	Union	15 Jun 2006	CK
"	"	Hunterdon	9 Jul 2006	JL
<i>Macromia illinoiensis georgina</i>	Georgia Cruiser	Monmouth	25 Jul 2009	JL
<i>Nehalennia integricollis</i>	Southern Sprite	Camden	1 Jul 2006	CK
<i>Pachydiplax longipennis</i>	Blue Dasher	Union	15 Jun 2006	CK
<i>Perithemis tenera</i>	Eastern Amberwing	Ocean	10 Jul 2006	CK
<i>Progomphus obscurus</i>	Common Sanddragon	Camden	13 Jul 2007	CK
<i>Somatochlora filosa</i>	Fine-lined Emerald	Camden	2 Aug 2004	CK
<i>Stylurus plagiatus</i>	Russet-tipped Clubtail	Camden	11 Jul 2005	CK
"	"	Gloucester	13 Sep 2005	CK
"	"	Salem	11 Jul 2007	CK
"	"	Atlantic	30 Aug 2007	CK
"	"	Cape May	30 Aug 2007	CK
<i>Sympetrum ambiguum</i>	Blue-faced Meadowhawk	Gloucester	13 Aug 2003	CK
"	"	Salem	20 Aug 2006	CK
<i>Sympetrum obtrusum</i>	White-faced Meadowhawk	Monmouth	15 Sep 2009	CK
"	"	Camden	26 Sep 2009	JL
<i>Tramea carolina</i>	Carolina Saddlebags	Monmouth	15 Sep 2009	JL



ARGIA and BAO Submission Guidelines

Digital submissions of all materials (via e-mail or CD) are vastly preferred to hardcopy. If digital submissions are not possible, contact the Editor before sending anything. Material for ARGIA must be sent directly to John C. Abbott, Section of Integrative Biology, C0930, University of Texas, Austin TX, USA 78712, <jcabbott@mail.utexas.edu>; material for BAO must be sent to Ken Tennessen, P.O. Box 585, Wautoma, WI, USA 54982, <ktennessen@centurytel.net>.

Articles

All articles and notes are preferably submitted in Word or Rich Text Format, without any figures or tables, or their captions, embedded. Only minimal formatting to facilitate review is needed—single column with paragraph returns and bold/italic type where necessary. Include captions for all figures and tables in a separate document.

Begin the article with title, author name(s), and contact information (especially e-mail) with a line between each. The article or note should follow this information. Paragraphs should be separated by a line and the first line should not be indented. Where possible always refer to the scientific name of a species followed by its official common name in parentheses.

Figures

Submit figures individually as separate files, named so that each can be easily identified and matched with its caption. Requirements vary depending on the type of graphic.

Photographs and other complex (continuous tone) raster graphics should be submitted as TIFF (preferred) or JPEG files with a minimum of 300 ppi at the intended print size. If unsure about the final print size, keep in mind that over-sized graphics can be scaled down without loss of quality, but they cannot be scaled up without loss of quality. The printable area of a page of ARGIA or BAO is 6.5 × 9.0 inches, so no graphics will exceed these dimensions. Do not add any graphic features such as text, arrows, circles, etc. to photographs. If these are necessary, include a note to the Editor with the figure's caption, describing what is needed. The editorial staff will crop, scale, sample, and enhance photographs as deemed necessary and will add graphics requested by the author.

Charts, graphs, diagrams, and other vector graphics (e.g. computer-drawn maps) are best submitted in Illustrator format or EPS. If this is not possible, then submit as raster graphics (PNG or TIFF) with a minimum of 600 ppi at the intended print size. You may be asked to provide the raw data for charts and graphs if submitted graphics are deemed to be unsatisfactory. When charts and graphs are generated in Excel, please submit the Excel document with each chart or graph on a separate sheet and each sheet named appropriately (e.g. "Fig. 1", "Fig. 2", etc.)

Tables

Tables may be submitted as Word documents or Excel spreadsheets. If Excel is used, place each table on a separate sheet and name each sheet appropriately (e.g. "Table 1", "Table 2", etc.)

The Dragonfly Society Of The Americas

Business address: c/o John Abbott, Section of Integrative Biology, C0930, University of Texas, Austin TX, USA 78712

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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. Membership in DSA includes a subscription to 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.

Membership in the Dragonfly Society of the Americas

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

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Back cover: (upper) *Lestes forficula* (Rainpool Spreadwing) representing the first record of this species in Alabama (see page 13). Photo by Steve Krotzer. **(lower)** *Perissolestes cornutus* male, at a small forest stream near Shushufindi, Ecuador, 14 October 2009. Photo by Ken Tennessen.

