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Front cover: *Tramea basilaris*, an Afrotropical species recently found and photographed in Martinique by François Meurgey. See François’ note in this issue.

In This Issue

This issue brings to a close another year of interesting and fun discoveries especially in the southern United States. By my count no less than five species were added to the North American list this year, including the most recent in this issue. The end of the year also means it is time to renew your dues for DSA. You will find a renewal form enclosed and Jerrell kindly requests that you fill these out and return them to him as soon as possible.

The 2009 Annual Meeting will be held in Sullivan, Missouri and looks to be one more in a long line of successful and fun meetings. You will find all the details of this meeting, including pre- and post-trips both in this issue and on OdonataCentral at <<http://tinyurl.com/5s7s6t>>. Please also use this URL to register your attendance so the hosts will have an idea of how many to expect. Please also note that this meeting nicely follows the 6th International WDA Congress in Xalapa, Mexico. Hopefully many of you will be able to attend both.

Rosser Garrison commemorates the 100th anniversary of the all important Odonata volume of the Biologia Centrali-America. I have used this invaluable source many times, but still learned some fascinating details thanks to Rosser's tribute.

There are two reports of anomalous dragonflies that should keep us on our toes and provides evidence of the importance of collecting. Rich Bailowitz and Doug Danforth discovered an individual of *Libellula pulchella* (Twelve-spotted Skimmer) lacking black wingtips and thus masquerading as a *Libellula forensis* (Eight-spotted Skimmer). Jim Johnson describes a population of *Leucorrhinia hudsonica* (Hudsonian Whiteface) that lack the conspicuous red spots on the abdomen.

Natalia von Ellenrieder discovered an interesting new way to collect odonates. She found individuals of two different Argentinean species stuck to sticky foam nests of frogs!

I have seen frogs capture and eat damselflies before, but never this.

Ken Tennessen describes a handy field technique for pointing out odonates in the field using a laser pointer. I first learned of this when giving a dragonfly walk to a group of birders. It works and is much more efficient than trying to describe the location of an individual amongst a tangle of vegetation.


François Meurgey has two articles on recent discoveries he has made in the French West Indies. The first is on a migratory flight of *Pantala hymenaea* (Spot-winged Glider). The second is a little more notable and serves as the cover photo for this issue; the second recorded occurrence of the African species *Tramea basilaris* in the Western Hemisphere.

Paul Catling reports a northern range extension of *Ischnura hastata* (Citrine Forktail) and outlines climate warming as the possible cause. This appears to be just one of a number of species whose expanding ranges may be tied to the effects of the warming planet. Not to be outdone, Derek Bridgehouse reports *Tramea lacerata* (Black Saddlebags) from Nova Scotia for the first time and Roy Beckemeyer reports a northwestern extension of the previously recognized range for *Miathyria marcella* (Hyacinth Glider). I think we will only see more and more species expanding their range northward and I encourage everyone to monitor these expansions closely and report them on OdonataCentral, <<http://www.odonatacentral.org>>.

Walter Chadwick details his 2008 findings in the Bronx borough of New York City. George Harp racked up his usual state and county records on his return trip from the 2008 Annual Meeting. This time he hit Idaho and Wyoming. Neither of these states are well known, but Idaho in particular has lacked much attention.


Calendar of Events

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

Event	Date	Location	Contact
DSA SE Regional Meeting	28–31 May	Galax, Virginia	Jerrell J. Daigle < jdaigle@netally.com >
6th WDA Internat. Congress	7–12 June	Xalapa, Mexico	Rodolfo Novelo-Gutiérrez < rodolfo.novelo@inecol.edu.mx >
DSA Annual Meeting	19–21 June	Sullivan, Missouri	Kathy Biggs < biggnest@sonic.net > 

Doug Danforth and Rich Bailowitz add another species to the North America list with their discovery of *Erpetogomphus elaps* (Straight-tipped Ringtail) in Arizona. Also from the southwest, Jerry Oldenettel reports *Brachymesia herbida* (Tawny Pennant) for the first time in New Mexico.

Tom Kogut reports on his discoveries along the Yakima River Horn in eastern Washington, a stream literally full of clubtails. On the other side of the world, John Heppner reports on his recent trip to Vietnam.

Finally, there are two new books everyone should be aware of. Nick Donnelly reviews the wonderful new field guide to The Dragonflies and Damselflies of Algonquin Provincial Park and the Surrounding Area. This is a must have for those living in or visiting this area. Alex Córdoba-Aguilar's edited a volume entitled Dragonflies and Damselflies: Model Organisms for Ecological and Evolutionary Research. It contains 19 articles covering a wide variety of topics that anyone interested in Odonata will find fascinating. 

2009 DSA Annual Meeting to be Held in Sullivan, Missouri, 19–21 June 2009

Paul McKenzie <paul_mckenzie@fws.gov> (573-445-3019 H and 573-234-2132 ext. 107W) and **Jane Walker** <j.walker_smentowski@yahoo.com> (314-965-6522)

The 2009 DSA annual meeting will be held 19–21 June 2009 in the scenic Missouri Ozarks at Sullivan, Missouri (pre-meeting trips 17–18 June; post-meeting trips 22–23 June—see further details below). Meeting headquarters will be at the Comfort Inn in Sullivan (573-468-7800) where we have reserved a block of 30 rooms. Located off Interstate 44 at exit 225, 736 South Road, Sullivan, MO 63080, the Comfort Inn has given us a discounted double occupancy rate of \$71.99 + tax. To get the discounted rate, mention that you are from the DSA or Dragonfly Society. Please make your reservations as early as possible to receive the discount rate. June 10 is the cut off date. Other motels in the area include Sullivan Super 8 (573-468-8076), Baymont Inn (573-860-3333), and EconoLodge (573-468-3136). Cabins and camping are available at Meramec State Park on a first come first serve reservation (573-468-6519).

WDA attendees (Xalapa Mexico, 7–12 June; 13–15 June with post trips), time and funding permitting, are most welcome to attend this meeting. Should one choose to attend the WDA post-meeting trip, the entire day of June 16 would be available for travel and still allow attendance at the DSA pre-meeting trips. Other logistical options are possible. Please contact Tim Vogt at <somatochlora_sp1@yahoo.com> for further details.

Sullivan is approximately a 1.5–2.0 hr drive southwest of St. Louis Lambert Field airport. From the airport drive west on Interstate 70 (to Kansas City), go south on Interstate 270 (to Memphis), then go west on Interstate 44 (to Tulsa) to exit 225 in Sullivan. Meramec State Park is off exit 226. For those members planning to drive in from the East, plan on using either I-70/I-270 or I-44 to go around St. Louis. A large section of US Hwy 40 is closed from I-270 eastward. Other fly in options include Kansas

City and hubs in Springfield, Jefferson City, and Columbia. DSA attendees should plan to arrive on Thursday, 18 June to take advantage of collecting trips starting from the “parking lot” of the Sullivan Comfort Inn Friday 19 June at 8:00 AM. Please contact Jane Walker by phone or e-mail (listed above) if you plan to meet at the Comfort Inn parking lot at 8:00 AM. We will need the list of attendees so we can figure out how many groups/field trips to divide into.

Notes on Collecting

Trip leaders will have the necessary permits to cover members at all designated trip localities. Missouri no longer requires a collection permit for terrestrial invertebrates, except as stated below:

“A Wildlife Collector’s permit is required to collect insects on any Missouri Department of Conservation lands, or to collect Species of Conservation Concern whether or not the collecting is done on MDC lands. Any requests to permanently remove Species of Conservation Concern must include written justification for the collection. The permits will require that MDC area managers and local conservation agents be notified in advance of collecting trips. The application form may be downloaded as either a PDF file, <<http://mdc4.mdc.mo.gov/Documents/11827.pdf>>, or Word document, <<http://mdc4.mdc.mo.gov/Documents/8908.doc>>.”

Current Missouri odonate Species of Conservation Concern (steps are currently underway to recommend removal of some of these species) include: *Anax longipes*, *Gomphus fraternus*, *G. ozarkensis*, *G. ventricosus*, *Macromia pacifica*, *Ophiogomphus westfalli*, *Somatochlora hineana*, *S. ozarkensis*, and *Stylurus notatus*. No collecting or netting of *Somatochlora*

hineana will be allowed. We have planned a series of group led collection trips to cover as much odonate diversity as possible. Trip leaders will have the necessary MDC and State Park permits to cover members. For those members that feel constrained by group led trips, those members planning on collecting insects other than odonates, and those wishing to collect aquatic stages of insects, we suggest you apply for your own collection permit. Other agencies may request additional permits. MDC permits supersede other agencies, including National Forest. MDC sends out permits six weeks from receipt of applications, so apply early. Jane Walker will field questions about permits, <j.walker_smentowski@yahoo.com>.

The DSA board meeting and presentations of papers will be held at the Meramec State Park Conference Center on Saturday, 20 June. The center is air conditioned with facilities. Collecting trips are planned for Friday, 19 June and Sunday, 21 June. Foray opportunities will focus on the Meramec River watershed and areas in between. The Meramec River is a medium-sized Ozark stream, undammed its entire 212 mile length. With a 25% base flow from ground water sources, the Meramec River flows off the Ozark Plateau wending its way northeast, east, then southeast into the Mississippi River. The Bourbeuse River, a tributary of the Meramec, is a winding, twisting river that covers 100 river miles over 27 air miles in one county. Both rivers are primarily sand-mud bottomed with gravel riffles separated by long shallow to deep pools and a diverse odonate fauna. Other tributaries included in our collection plans include Indian and Little Indian

Nick and Ailsa Donnelly Fellowship for 2009

DSA offers assistance with travel of presenters to DSA meetings. The fellowship is open to anyone presenting a talk or poster at the DSA annual meeting, but preference will be given to individuals from outside the United States presenting a talk who would otherwise not be able to attend due to financial constraints. Typically the fellowship will be in the amount of \$1000, but ultimate discretion is given to the Executive Council. Applications are now being accepted for the 2009 Meeting in Sullivan, Missouri. If you would like to apply, please send an e-mail to John Abbott, <jcabbott@mail.utexas.edu>, with the title and abstract of your talk or poster, a brief statement indicating your financial need, and a cv or resume. The deadline for applications is 1 May 2009.

Creeks, the Courtois River, and the Huzzah. We are also planning visits to some fishless ponds in the Mark Twain National Forest and to an Ozark fen site for a *Somatochlora hineana* photo op.

Some of the expected odonate fauna includes: *Anax longipes*, *Arigomphus villosipes*, *A. submedianus*, *Lestes eurinus*, *Gomphus externus*, *G. graslinellus*, *G. ozarkensis*, *G. quadricolor*, *G. vastus*, *Macromia illinoensis*, *M. pacifica*, *Neurocordulia xanthosoma*, *Ophiogomphus westfalli*, *Somatochlora linearis*, *S. ozarkensis*, *S. tenebrosa*, and *Stylogomphus sigmastylus*. We are also hoping to collect *Gomphus fraternus* (new to Missouri 2005), plus *G. lineatifrons* and *G. ventricosus*, all three from the Meramec River but rare.

Three Pre-meeting Trips Planned

1. Columbia and Surrounding Environs. Wednesday-Thursday, 17-18 June (plan on arriving 16 June). Paul McKenzie and Linden Trial will lead trips to Rocky Forks Conservation Area, Finger Lakes State Park, Mark Twain National Forest just SE of Columbia, and private property with a large population of *Ischnura kellicotti*. Other target species include: *Anax longipes*, *Arigomphus lentulus*, *Gomphus externus*, *G. graslinellus*, *G. militaris*, and *Dythemis velox*. No block of rooms have been reserved in Columbia, but the following is a list of possible accommodations with telephone numbers: At the east end of town near I-70 and Rt. 63 (exit 128A): Comfort Inn (573-814-2727); Country Inn & Suites (573-445-8585); Hampton Inn & Suites (573-886-9392); and Super 8 (573-474-8488). Contact Paul McKenzie for more information: e-mail: <paul_mckenzie@fws.gov>, phone (573-445-3019 H and 573-234-2132 ext 107 W). Columbia, MO is a 2 hour drive west of St. Louis Lambert Field Airport on I-70. People flying into Columbia would travel north on Rt. 63 from the Columbia airport to the I-70 hotels listed above. People attending this pre-trip will head to Sullivan the afternoon of 18 June so we will be available for field trips in/near Sullivan on Friday, 19 June. People participating in the 17-18 June pre-trip should make their reservations at the Sullivan Comfort Inn or alternative lodging for 18-20 June.

2. Float Trip on the Meramec River Thursday, 18 June. Interested participants should plan on arriving in Sullivan, Missouri on 17 July. (See directions to Sullivan under information on DSA meeting). Jane Walker and Joe Smentowski will lead a 10 mile canoe float trip on the Meramec River. The first five miles will pass lots of gravel bars with opportunities to wade and collect. During the second half we will stop at Green Cave and explore one of many caves in the area. The trip will end at Meramec State Park, just south of Sullivan Missouri. The trip will cost \$30.00 per canoe. This section of the Meramec River requires moder-


ate Class I canoe skills. Target species include: *Arigomphus villosipes*, *Gomphus externus*, *G. fraternus*, *G. graslinellus*, *G. lineatifrons*, *G. ozarkensis*, *G. quadricolor*, *G. vastus*, *G. ventricosus*, *Hagenius brevistylus*, *Macromia illinoiensis*, *M. pacifica*, and *Ophiogomphus westfalli*. Contact Jane Walker for information: e-mail <j.walker_smentowski@yahoo.com>, phone: (314-965-6522 H).

3. Southwest Missouri Prairie Country, Wednesday and Thursday, 17–18 June. Individuals interested should plan on arriving 16 June. Tim Vogt will lead a trip to Joplin, Missouri, La Petite Gemme Prairie, Prairie State Park and Clear Creek Conservation Area. Target species include: *Argia nahuana*, *Arigomphus lentulus*, *Dytbemis fugax*, *D. velox*, *Gomphus militaris*, and an odd *Cordulegaster* Tim thinks may be a new species. Suggested lodging is the Lamar Super 8 (417-682-6888) in Lamar, MO. Contact Tim Vogt for more information: e-mail <Somatochlora_sp1@yahoo.com>, phone (573-636-5824 H). Note: because this pre-trip is on the opposite side of the state from Sullivan, Missouri, participants in attendance may not reach the Comfort Inn until Friday 19 June. Participants attending this pre-trip that arrive in Sullivan Thursday, 18 June should contact Jane Walker if you plan to meet at the Sullivan Comfort Inn at 8:00 AM Friday, 19 June.

Post Trip Opportunities (1–2 days depending on interest)

1. A Two in One Field Trip to Kaintuck Hollow Fen, DeWitt Pond, Mark Twain National Forest wildlife pond, Mills Creek and Little Piney Creek Conservation Area. One group will be collecting with Paul McKenzie, <paul_mckenzie@fws.gov>, and Tim Cashatt and the second group will be photographing with Richard Day, <richard@daybreakim-agery.com>. The two groups will visit each site at different times in order not to interfere with each other. Target species include: *Anax longipes*, *Argia bipunctulata*, *A. plana*, *Chromagrion conditum*, *Enallagma carunculatum*, *Gomphus militaris*, *G. ozarkensis*, *Lestes eurinus*, *Ophiogomphus westfalli*, and *Stylogomphus sigmastylus*. Contact Paul McKenzie for more information.


2. Gasconade River, Big Piney and Little Piney Rivers. Target species include: *Arigomphus villosipes*, *Gomphus lineatifrons*, *G. ozarkensis*, *G. quadricolor*, *G. vastus*, *Ophiogomphus westfalli*, and *Stylogomphus sigmastylus*. Contact Tim Vogt for more information, <Somatochlora_sp1@yahoo.com>.

[Meeting registration and updated information can be found at <<http://tinyurl.com/5s7s6t>>. Ed.] 

2009 DSA SE Regional Meeting in Galax, Virginia

Jerrell J. Daigle <jdaigle@nettally.com>


The 2009 DSA Southeast regional meeting will be held in Galax, Virginia, 28–31 May near the famous New River. Our target species will be *Ophiogomphus howei* (Pygmy Snaketail), but we have seen *Gomphus lineatifrons* (Splendid Clubtail), *G. viridifrons* (Green-faced Clubtail), *Stylurus* spp., and *Neurocordulia* spp. here as well. Possible other nearby species could be *Macromia margarita* (Mountain River Cruiser), *Ophiogomphus susbehcha* (St. Croix Snaketail), and *O. edmundo* (Edmund's Snaketail). Under my name/DSA, I have reserved a block of 10 non-

smoking two-bed rooms, in Galax at the Rodeway Inn (276) 236-5127. Please ask for Mrs. Patel and reserve your room ASAP. For best results, please call before 2:00 PM. The rooms will be held up until a month before the meeting. Other motels are Knights Inn (276) 236-5517, Galax Motel (276) 236-9935, and Hampton Inn (276) 730-9999. There are several good restaurants in town, including Mexican fare and Dairy Queen. If you plan to attend or have any questions, please let me know. See you there! 

2008 Treasurer's Final Report

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

We began the 2008 year with a balance forward of \$15,625.05. Our current balance is \$16,649.06. Total expenses for 2008 were \$5,003.35. Our projected year-end balance should be about \$13,000. Currently, we have a DSA membership of 365. We filed a 990 Tax Exempt Form online and it was approved. Our 8734 Non-Profit Organization status report has been approved by IRS. Membership dues are tax-

deductible. It is anticipated that income and expenses will be lower in 2009 due to the new cost structure of a cheaper electronic version of ARGIA. Our status as a non-profit organization means we adhere to the society bylaws. We can make grants to fund research and/or travel expenses to people who want to give presentations at the annual meeting through the Nick and Ailsa Donnelly Fellowship. 

100 Years of the *Biologia Centrali-Americana*, Neuroptera

Rosser W. Garrison <rgarrison@cdfa.ca.gov>

Natalia von Ellenrieder and I have been at work on Volume 2 of the New World keys to genera of Odonata—the Zygoptera, and we have been examining past literature pertinent to the taxonomy of these fascinating insects. One of the truly great works treating a major faunal area of the Neotropical region is The *Biologia Centrali-Americana*; or, (as the full title states, Fig. 1) Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. The Odonata portion, which was written over a period of nine years, was completed in November 1908, just 100 years ago, justifying this reminder of its centennial.

Calvert (1908c) states that “. . . the completion of the account of the Odonata in the *Biologia Centrali-Americana* [Calvert, 1901, 1902, 1903, 1905b, 1906, 1907, 1908a, 1908b] and the rather restricted circulation which the book must enjoy, owing to the necessarily expensive character of the series . . .” was successfully undertaken by “. . . [Robert] McLachlan, of London; [Herman] Hagen, of Cambridge, Mass., and [Ferdinand] Karsch, of Berlin” but was relinquished by each and was “. . . entrusted to the present writer [Calvert] in the beginning of 1899.” So began, in my opinion, the most detailed and diligent work that Calvert produced. It has served as the cornerstone for future work on Neotropical Odonata and even at 100 years, it remains the one indispensable work for the fauna of that region (Donnelly, 1998). Fortunately for us, the full *Biologia*—all 63 volumes worth—is available on-line (<http://www.sil.si.edu/DigitalCollections/bca/>); the Neuroptera section was volume 50 of the series.

An introduction to the series was given by the founder and editors, Frederic DuCane Godman and Osbert Salvin in the introductory volume (Godman, 1915), and this was largely updated followed by a detailed gazetteer to localities by Selander and Vaurie (1962; available on-line at <<http://digitallibrary.amnh.org/dspace/handle/2246/3415>>). Calvert (1905a, 1916a, b) provided more information on the completion of the *Biologia* as well as an obituary of Godman (Calvert, 1919) who completed it. The entire work was issued as a series of fascicles or parts to subscribers over a period

of 36 years beginning in September 1879 and ending with part 215 in June 1915. Each part (Fig. 1, part 188) might contain text and plates of any combination of volumes. The final part for each volume when issued consisted of a title page, table of contents, introduction, and list of plates. The previous fascicles and plates for each volume were meant to be separated and bound as a volume. The incredibly detailed and wonderfully executed engraved plates were either uncolored, lithographed (rarely), or, most often, individually hand colored (Fig. 4). Apparently, subscribers received hand colored editions of the plates but I have seen sets of the *Biologia* where plates were not colored, perhaps indicating that these sets were extras. Hand coloring of the plates was

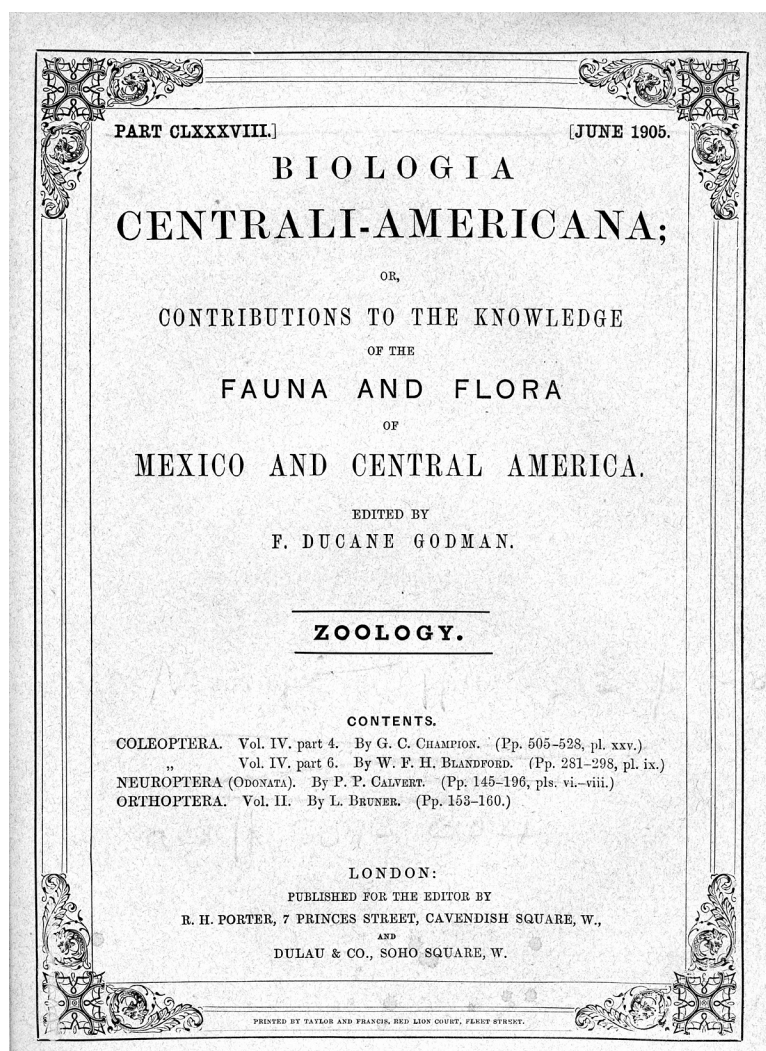


Fig. 1. Cover sheet for part 188 of the *Biologia Centrali-Americana* containing pages 145–196 and plates 6–8 of the Neuroptera volume which was issued on June 1905.



P. P. CALVERT
geb. 29. I. 1871.

Fig. 2. Philip Calvert as a young man taken from Schmidt (1933).

and still represents one of the finest examples of scientific art although there was limited need of this for the Neuroptera volume since most of the figures were of the all-important secondary sexual characters.

The Neuroptera volume, largely by Philip Calvert (Fig. 2, 3) comprised pages v + xxx and 17 through 420 and treated 276 species (77 new). My examination

of the insect volumes show most to contain descriptions of species sometimes preceded by partial keys—many of these in Latin. By contrast, the Odonata section is one of the few which contains a detailed introduction and includes a map showing temperature zones for Mexico and Central America. For me, the most astounding aspect of the volume is the attention to detail and, above all, original presentation of data which Calvert worked over from the largely pinned collection of specimens available to him. The work was probably the first to usher a new era of a modern systematic treatment of Odonata. His was the first to attempt a full systematic treatment with full synonymies, keys, and diagnostic and/or full descriptions of taxa. His completeness makes use of the Odonata volume relatively easy.

Although Calvert relied on previous literature—primarily that of the two great predecessors, Selys and Hagen, much of his data and character sets were new. Calvert (1908c) examined 10,838 specimens and stated that:

“The greater part of the nine years occupied in the preparation of this work has been consumed by the gathering and tabulating of various characters—especially those of the veining of the wings—which have been employed by previous writers to separate the genera, or which seemed to lend themselves to that purpose. These data (collected without the aid of clerks or assistants), numbering above one hundred and fifty thousand, were reduced to percentages for each of the species studied. Features which showed a variation of ten percent or less were thereby assumed to be of sufficient constancy to serve as generic characters, and among these importance was naturally assigned to

those showing the least degree of variability.”

He was not always successful as is evidenced by his introduction to the key for the genus *Argia* (Calvert 1901):

“After many efforts to arrange the species of the present fauna into natural groups, the attempt has been abandoned. The alliances suggested by one set of characteristics appear to be contradicted by others having equal weight. The key here offered has very little pretention to expressing natural relationships. It is only given in the belief that it is better than no key at all, and as being the least unsatisfactory of those which I have successfully drawn up and discarded.”

Still, that one key has been used successfully by others in allowing determination for members of this genus (Förster, 2001). His keys were often long but this is because he was thorough and he often alluded (usually in one of his copious footnotes) to comparisons with Old World taxa. Calvert’s treatment of some extremely difficult groups were among the finest produced: *Hetaerina* and especially *Argia* (this genus of which he considered a revision of sorts), for example. His treatments of the complex genera *Erythrodiplax* and *Perithemis* were later rectified by Borror (1942) and Ris (1930) but each acknowledged their indebtedness to Calvert’s first try at a modern analysis.

Anyone using the Neuroptera volume soon realizes that Calvert missed little and was often right in his conclusions. This was due to his astute powers of observation. We see, for example, that he employed morphological characters in constructing keys to *Hetaerina* (“No identification of a male *Hetaerina* is certain unless its terminal abdominal appendages have been examined and determination based thereon . . .”), *Argia* (“Few Odonata are more difficult to identify specifically, so that I have been obliged to devote a large amount of time to the study of this genus.”), and *Micrathyria* (“It is much to be regretted that recent authors, in introducing new species of *Micrathyria*, have not followed the example, set by Hagen in 1861, of describing the external genitalia, which are unquestionably the chief specific characters in this genus. The difficulties of identification are much increased by this omission”). Calvert carefully compared material to original descriptions in applying names to taxa usually getting these correct but sometimes not. Later analyses showed for example his association of specimens to descriptions of *Amphipteryx agrioides* Selys, *Argia difficilis* Selys, *Argia fissa* Selys, *Telebasis griffinii* (Martin), and *Erpetogomphus viperinus* Selys, were incorrect.

The nine plates accompanying the Odonata volume consist mainly of illustrations of the complex caudal appendages of the male and thoracic structure of the females. Plate 2 (Plate 1 is of Ephemeroptera) consists of shaded renderings

by Amelia Smith (later to become Calvert's wife) of appendages of *Hetaerina*. Inked colored lithographs of variability in wings for *Hetaerina titia* and hand colored markings of the iridescent green as applies to the thorax of three similar species of female *Hetaerina* (Figs. 18–20) follow on Plate 3. Plate 4 is devoted to *Argia* and though all are simple outline drawings, the outlines are detailed and allow for identification when referenced to the keys for the genus. Despite Fraser (1946) indirectly criticizing use of simple outline illustrations for this genus (“A simple outline is the most that has been given by any author, and this I am of the opinion is quite inadequate . . .”), I have found Calvert's illustrations to more accurately reflect a given species than do Fraser's rendered illustrations for his South American species. Plate 5 presents detailed and often shaded renderings of caudal appendages of various *Zygoptera*. An interesting footnote at the bottom of the legend to Plate 5 states: “All the specimens from which figures of appendages in Plates IV and V have been drawn have been specifically selected, or relaxed and prepared, to make sure that the appendages were fully extended, since many individuals die with these parts more or less retracted. Similar treatment must, of course, be employed in those specimens which the reader may wish to compare with these figures.” This is excellent advice to be followed today. Plate 6 (Fig. 4), the most colorful of the set, depicts variation in the wing patterns of *Perithemis* (all inked lithographed) as well as including hand colored renderings of the extraordinary body coloration in examples of *Hesperagrion heterodoxum*. Plates 7 through 10 comprise details mainly for Anisoptera and supplementary material for both *Zygoptera* and Anisoptera. For me, these latter set of plates seem to be cruder—especially as to wing venation on Plate 8, although details are more finally shown on Plate 9.

Philip Calvert was one of the greatest authorities on Neotropical Odonata and many more papers flowed from his pen (or typewriter?) after the *Biologia*. Of particular importance to students is his work on the South American fauna (Calvert, 1909) but I do not think that this work is up to or equals the *Biologia*; several species described appear hastily done, are brief, and have often required examination of types to determine their identity. In his defense, the South American fauna, compared to that for Middle America, was (and still is) less known. He lived to a ripe old age and continued publishing on the New World fauna. His work on the *Biologia* has lightened our task for our continuing work on the Neotropical fauna and I am certain that its free access via the web will continue to be of great benefit to future students of the Order.

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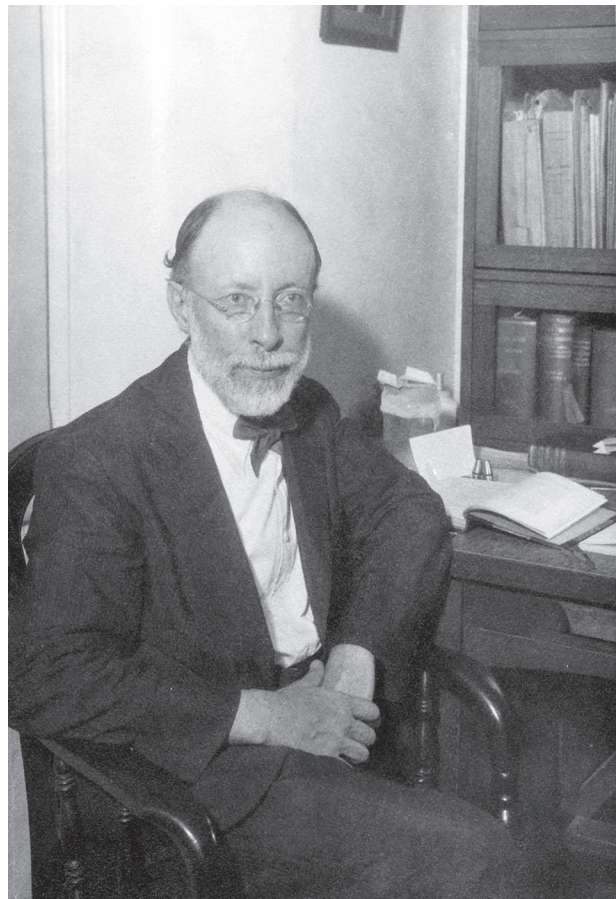


Fig. 3. Philip Calvert in old age from a photo given to R. W. Garrison by the late L. K. Gloyd.

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Fig. 4. Plate 6 of the Odonata portion of the *Biologia Centrali-Americana* issued on June 1905. Figs. 10–18, 19–27 are inked lithographed; figs. 1–6, 8–9 are hand painted. Compare with the digital copy of this plate at the Digital Biologia web site where figs. 1–6, 8–9 are uncolored.

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Beware the Spotless *Leucorrhinia hudsonica* (Hudsonian Whiteface)

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Over much of its range male *Leucorrhinia hudsonica* (Hudsonian Whiteface) are relatively easy to separate from most other members of its genus by its series of conspicuous red spots on the abdomen. Though variable, size is often a helpful indicator for *hudsonica* among members of the genus with red on the abdomen, being smaller than *glacialis* (Crimson-ringed Whiteface), *proxima* (Belted Whiteface), and *borealis* (Boreal Whiteface), and larger than *patricia* (Canada Whiteface). This is certainly the case in Oregon where the known *Leucorrhinia* were limited to *intacta* (Dot-tailed Whiteface), *hudsonica*, and *glacialis* before this year. Thanks to Steve Gordon and Cary Kerst, *L. proxima* was finally recorded in the state during the 2008 DSA Annual Meeting pre-meeting trip.

Leucorrhinia proxima was long expected to be found in Oregon since it was common to the north in northern Washington and was known from one location to the south in California. Whenever I found myself amongst a horde of *glacialis*, I would spend time netting a bunch to see if I could pick up a *proxima*—never successfully.

During a couple of visits to Camas Prairie in the northern Cascade Range of Oregon (Wasco County) this summer the *Leucorrhinia hudsonica* were present in huge numbers. Always on the lookout for *proxima*, I kept my eyes open for individuals which seemed to be a little bit bigger than the *hudsonica* or which appeared to have a black abdomen aside from the basal segments. Many times I netted individuals with reduced red spots on the abdomen, which isn't so unusual, but then I got one with an entirely

black abdomen except for the red areas on the basal units. A look at the hamules confirmed that it was a *hudsonica*. Although you expect some variation in coloration, I had never heard of a male *hudsonica* that completely lacked the red abdominal spots. Additional searching turned up another male *hudsonica* which lacked the red spots entirely. These were collected and I posed one for photos (Fig. 1).

After getting home, I sent an image to Dennis Paulson and described what I found. He said that he also had never seen nor heard of a male *Leucorrhinia hudsonica* which lacked its red spots. We agreed that it would be easy to pass one off as a smaller-than-normal *glacialis* or *proxima* by sight or in a photo—*proxima* specifically if the single row of cells in the radial planate is observed. A quick check of the popular literature revealed a few mentions of reduced abdominal spots to the point of being difficult to see in the field (Dunkle, 2000; Manolis, 2003), but none indicate that the spots can be entirely lacking.

Considering that Dennis had never observed *hudsonica* like this during his decades of collecting and observation in Washington and elsewhere, I started to wonder if this was a local phenomenon. But that changed when I found additional spotless *hudsonica* further south in the Cascades in Marion County (Fig. 2); then, during a DSA Annual Meeting outing at Sparks Lake outside Bend, Deschutes County, I found a male which was almost entirely spotless except for just a tiny, ill-formed splotch on the seventh, I think, segment. Nick Donnelly was interested in this individual, so I gave it to him. Perhaps it's just in parts of



Fig. 1. Male *Leucorrhinia hudsonica* lacking red spots distal of the basal abdominal segments; 3 Jul 2008, Camas Prairie, Wasco Co., Oregon; posed. Photo by Jim Johnson.




Fig. 2. Male *Leucorrhinia hudsonica* lacking red spots distal of the basal abdominal segments; 20 Jul 2008, Scorpion Mtn. ponds, Marion Co., Oregon. Photo by Jim Johnson.

the Cascades where a small percentage of male *hudsonica* lack spots, but it will be interesting to hear if this condition is observed elsewhere.

I may try to quantify the number spotless *Leucorrhinia hudsonica* at particular sites in the coming seasons, but in the mean time, don't just assume that the spotless Whiteface you're looking at or photographing is of the Crimson-ringed or Belted variety.


A Natural Sticky-trap for Odonates

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Rosser Garrison and I spent 30–31 October 2006 in National Park El Rey, a protected area encompassing cloud forest and transition to Chaco forest in the NW of Argentina. At a shallow pond covered with a dense carpet of Mosquito Fern (*Azolla*), Duck Weed (*Lemna*), and Water Hyacinth (*Eichhornia*) about 4 km SE of Cascada Los Lobitos, we found numerous odonates trapped on the surface of foam nests of the Rufous Four-eyed frog (*Pleurodema borelli*). We had not seen this phenomenon before, and we found no reference to it in the literature. Marissa Fabrezi, herpetologist at the Museo de Ciencias Naturales de Salta, identified the frog nests. The odonates sticking to the foam were males of the two most common species at the pond, *Telebasis willinki* and *Erythrodiplax media*. Is this a preferable way of dying than verses being trapped on a spider web? 

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Libellula pulchella (Twelve-spotted Skimmer) without Black Wingtips

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During the fall of 2007, Sandy Upson, Doug Danforth, and Rich Bailowitz visited the Esterito Marsh at San Carlos, Sonora, Mexico. Here, a perennial creek draining the southwestern corner of the Sierra El Aguaje enters a small bay. The area has an extremely rich odonate fauna with species such as *Tramea calverti* (Striped Saddlebags), *Erythemis plebeja* (Pin-tailed Pondhawk), *Erythemis vesiculosa* (Great Pondhawk), and *Erythrodiplax funerea* (Black-winged Dragonlet) being quite regular. Bailowitz and Danforth spotted a single specimen of *L. pulchella* (Twelve-spotted Skimmer) here, seen both flying and perched, but were unable to photograph the specimen or collect it.

On 23 September 2008, this intrepid trio returned to the slough and saw two and collected one typical *L. pulchella*.



Flying amongst them was a single specimen without dark wingtips. This was thought to be *Libellula forensis* (Eight-spotted Skimmer) at first sighting, was photographed (see photo) and subsequently collected. Potentially being a new state record for Sonora, careful examination suggested that it might not be an *L. forensis*. It had a body length of 55 mm and a hindwing length of 43 mm, both clearly too large for *L. forensis*. Its pattern also was suspect, the outermost black patch only reaching approximately $\frac{2}{3}$ of the way to the hind wing margin. And finally, in true *L. forensis*, the outermost white patch straddles the pterostigma, centered below it, while in *L. pulchella*, it is almost entirely basal to the pterostigma. A very slight hint of beige coloration at the wingtips is evident in hand.

On the specimen, the lateral thoracic striping is wide and the abdomen is heavily pruinose except for scrape marks

on the sides of the middle segments suggesting previous mating. In light of fall records of *L. pulchella* from ponds across southern and even southwestern Arizona this year, additional late season records from southern California in September, and yet another record of *L. pulchella* from another pond east of San Carlos that same afternoon, it seems very plausible that this single aberrant specimen is nothing more than that—an aberrant individual. In the future, in the Southwest, large specimens of “*L. forensis*” should be examined closely to eliminate the possibility of blackless wingtipped *L. pulchella*. 

A Tip for Pointing Out Perched Odonates in the Field

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Two weary hikers are on their way back to the truck after a long day of seeing few dragonflies. The humidity and humidity are weighing them down. As they shuffle side-by-side through the last stretch of third-growth forest, one of them still has energy to peer off to his side of the trail.

Jim: “Hey, there’s a *Lestes* male!”

Steve: “Oh yeah, where?”

Jim points with his net handle: “See the spindly branch angling off that little willow, about 12, or maybe 15 feet away?”

Steve: “I think so . . .”

Jim: “OK, just behind it there’s a small low bush. It’s got three leaves poking out the right side, near the top, at about two o’clock. See them?”

Steve: “I guess . . .”


Jim: “OK, the *Lestes* is perched on a dead vine hanging down just below those leaves. See it now?”

Steve: “No.”

If you’ve ever tried to point out to another person just where a damselfly or dragonfly is perched, dialogue such as the above probably sounds painfully familiar. Trying

to direct someone else’s line of sight to the exact location of an odonate can be a real challenge. Having been on both ends of this fiasco, I have finally found an easier way. Rather than describing the complex tangles of the physical plant world, how about using a laser pointer?

If you can hold the pointer steady, and there isn’t too much vegetation between you and the ode, you should be able to put the dot of light on or very near the exact perch site. I suggest starting the beam on a nearby tree trunk or other obvious landmark that everyone can see, then moving the dot toward the perched ode. One big advantage is that you do not have to disturb the vegetation on which the odonate is perched. A laser pointer can be a great asset for leaders of small groups composed of newcomers carrying binoculars and cameras. And laser pointers are small, adding very negligible bulk or weight to the field equipment you already carry.

A red laser pointer, such as those commonly used for making slide presentations, can work but the dot it produces outdoors is rather weak. On bright days, especially in more open areas, the red dot is hard to see. Green lasers are stronger, although green light blends in more with the vegetation. If you decide to use a green pointer, be careful not to point it at the sky where airplanes may be overhead. And don’t spot either red or green dots on the macaws—they hate that. 

Migration of *Pantala hymenaea* (Spot-winged Glider) in the French West Indies

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In early September 2008, I had the opportunity to collect dragonflies in Guadeloupe during a brief stay devoted to meetings with the Parc National de Guadeloupe. On September 08, Pierre and Claudine Guezennec, Gwenaël David and I, went to the mangrove swamps of Le Moule, east of Grande-Terre, where we were surprised to catch one single female of *Pantala hymenaea* (Spot-winged Glider). This constituted the first record for the Lesser Antilles. Despite further searches, no other specimens were observed.

But this first single observation was the prelude to an important migration of this species in the French West Indies. During the following months, several other specimens were seen together with numerous *Tramea calverti* (Striped Saddlebags) along the east coast of Grande-Terre during September and early October 2008.

On 24 and 28 September, more than 10 specimens were photographed near St. François and Le Moule (Grande-Terre). On 10 October, a female was caught in Martinique, 400 km south of Guadeloupe, ovipositing near Fort-de-France. On 16 October and following days, more than five specimens were seen on St. Barthélémy, 230 km north of Guadeloupe.

Later that month, the number of individuals increased in both Guadeloupe and Martinique. In Guadeloupe, the peak was observed on 27 October with more than two hundred individuals at “Pointe des Châteaux”, on the extreme point

of Grande-Terre. It's interesting to note that “Pointe des Châteaux” is known by ornithologists to be an important area for birds in postnuptial dispersion. In Martinique, more than 20 individuals were observed on the southern part of the island, at 100 meters altitude, together with *Tramea onusta* (Red Saddlebags). Finally, the number of sightings decreased slowly to reach, in early November, no more than one or two specimens along the east coast.

During the survey of this species on Guadeloupe, several females were observed ovipositing. This species seems to prefer brackish waters, such as temporary ponds and lagoons. We noticed that, just after copulation, the female flew away from the water and emitted a mass of eggs which were stored under the ninth abdominal segment. After some minutes, the female returned to the waters to oviposit. Generally, females oviposit in the afternoon, especially between 04:00 and 05:00 PM. At that time, males are away from the water. This behaviour, also known for the darners, is rare among libellulids. One female was seen ovipositing in a puddle pool on a beach in Martinique.

This sudden surge of *P. hymenaea* in the Lesser Antilles could be, in part, explained by the passage of the tropical storm Omar. Originating in the Caribbean, it crossed the West Indies in October 2008 while following a SW–NNE direction. The winds could have transported numerous *P. hymenaea* from South America to the Lesser Antilles.



A New Northern Limit for Citrine Forktail (*Ischnura hastata*), Possibly Due to Climate Warming

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In September 2008, Citrine Forktail (*Ischnura hastata*) was found 93 miles (150 km) north of the nearest previously known location in Canada (Figure 1) and north of the northernmost US locations in northeastern New York and southern Maine (Lam, 2004; Donnelly, 2004; Blust, 2005). This is the first record for the St. Lawrence Lowlands ecoregion of Canada (Ecological Stratification Working Group, 1995) and for the Ottawa district (Bracken & Lewis, 2008). A total of 110 individuals were seen including approximately equal numbers of males and females. The observations were made in an alvar area (shallow soil over limestone rock) approximately 18 miles (28.5 km) WSW of Ottawa near

the town of Almonte, in Lanark County. Within an area of 0.4 square miles (1 km²), they were present at six temporary marshes and ponds where they occupied areas of less than 25 m². The maximum distance between these sites was 1.6 miles (2.6 km). The numbers, locations, and dates seen were: 22, 45.2563° N, 076.1512° W, 3 Sep; 30, 45.259° N, 076.1524° W, 3 Sep; 12, 45.2605° N, 076.1408° W, 3 Sep; 15, 45.2513° N, 076.1723° W, 3 Sep; 2, 45.2538° N, 076.1542° W, 3 Sep; 3, 45.259° N, 076.1524° W, 5 Sep; 13, 45.2513° N, 076.1723° W, 13 Sep; and 13, 45.2514° N, 076.1570° W, 13 Sep. The relatively large number of individuals seen at several isolated marshes in one small area suggests a local population that

was not detected in a survey of some of the same marshes in 2001.

A widespread species

Ischnura hastata is one of the most widespread Odonates in the world. It is thought that “their wide range is due to their adaptability and to being carried by the winds” (Dunkle, 1990). It is noted that they have been trapped in nets mounted on airplanes at a height of 300 m. Geijskes (1967) provided evidence of transport by wind for 161 km over open water and Belle (1992) also provides evidence of long distance movement. Recently it was discovered that populations of *I. hastata* on some oceanic islands are all female, the females reproducing asexually (by parthenogenesis—the growth and development of embryos without fertilization) possibly related to a bacterial infection (Cordero Rivera et al., 2005). Such a breeding system facilitates colonization, but is apparently not widespread in the species and is otherwise unknown in Odonata (Sherratt & Beatty, 2005).

History in Ontario

In Canada *I. hastata* is known only from Ontario where it is rare and has been assigned a conservation status rank

(both Canada and Ontario) of “2” which indicates species that “may be at risk” (Catling et al., 2005). It was first reported from Ontario by Walker (1953) from two localities near the north shore of Lake Erie (Tillsonburg in Oxford County and Point Abino in the Regional Municipality of Niagara). Subsequently it was located in Elgin County in 1990 by W.G. Stewart, in Kent County in 1999 by P.M. Catling and in Essex County in 1999 by P. Pratt. These new records were all still with the Lake Erie region and the traditional Carolinian zone of Ontario. The most recently published map (Lam, 2004), shows it confined to this region in Ontario, but it has been found north of this area in southwestern Ontario by M.J. Oldham in Wellington County in 1999 (Oldham, 2000) and much further to the northeast in Prince Edward County by D. Bree in 2000 (Bree, 2001, 2002, 2005), these localities included in the map on the Natural Heritage Information Centre (NHIC) web site <http://nhic.mnr.gov.on.ca/odonates/All_Ont/Ischnurahastata.jpg>.

The ponds and marshes in the alvar area near Almonte were the subject of an inventory of Odonata in 2001 at which time 11 species were recorded in sufficient numbers as adults to suggest breeding in the pools. The fact that *I. hastata* was not encountered during that study on 4 Aug

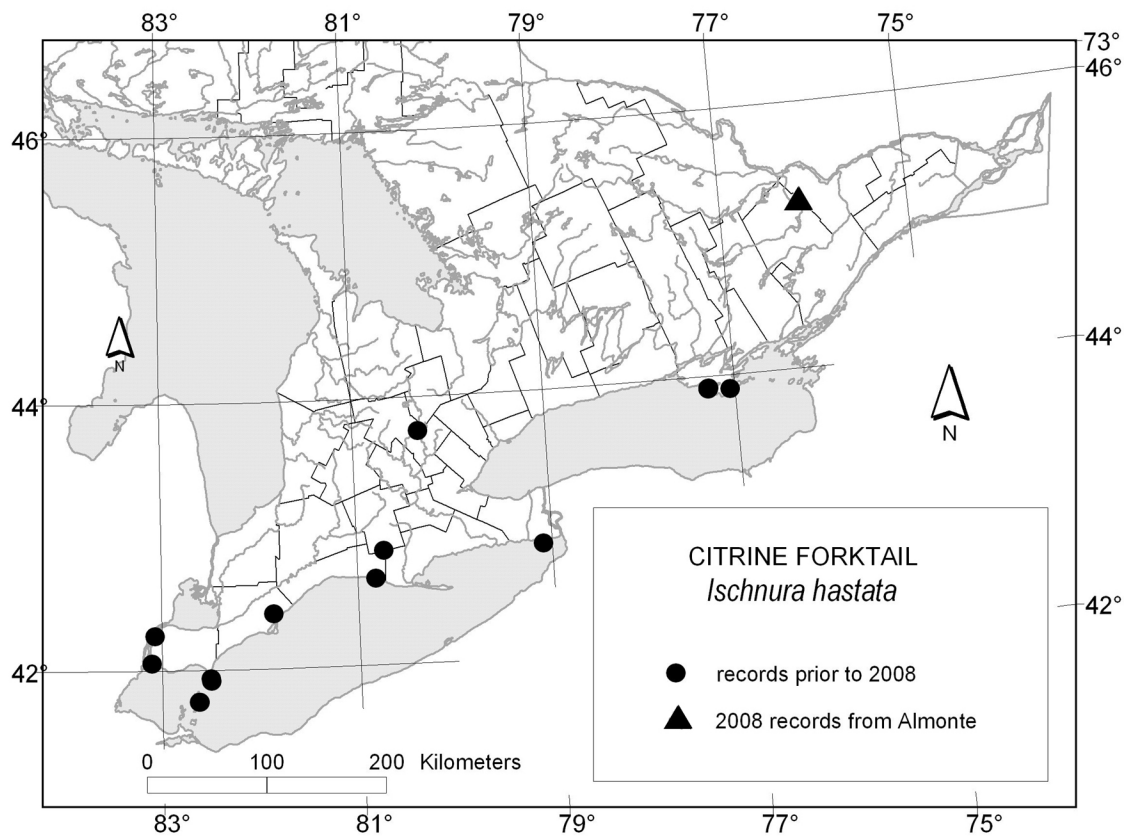


Figure 1. Occurrence of Citrine Forktail (*Ischnura hastata*) in Ontario.

2001 in three of the same ponds where it was present in 2008 suggests that it is a new arrival.

Part of a climate warming trend?

Ischnura bastata has been recently discovered in Michigan (Craves & O'Brien, 2002) and in the Lake Champlain region of northern Vermont (Blust, 2005). The apparent northward extension of *I. bastata* is further evidence of Odonata moving northward in Ontario in response to climate warming. See also reference to *Ischnura posita* (Fragile Forktail; Catling, 2005), *Anax junius* (Common Green Darner; Catling & Brownell, 1998; Catling, 2004), *Tramea lacerata* (Black Saddlebags; Catling & Brownell, 1998; Bracken & Lewis, 2002), *Perithemis tenera* (Eastern Amberwing; Bree, 2005), and *Hetaerina americana* (American Rubyspot; Catling, 2005). Although it is likely not the only factor, climate warming may have played a role in the recent extension of the ranges of *Enallagma basidens* (Double-striped Bluet; Cannings, 1989; Catling et al., 2001), *Enallagma civile* (Familiar Bluet; Hellebuyck, 1993; Catling, 1996, 1998; Hutchinson, 1999; Perron, 2000), *Enallagma anna* (River Bluet; O'Brien & Pratt, 1998; Catling et al., 2001; Jones, 2002; Bree, 2005) and *Archilestes grandis* (Great Spreadwing; Cotterman, 1930; Williamson, 1931; Borkin, 1985; Pratt & Paiero, 2003; Craves, 2006) in Ontario and eastern Canada. A northward shift in the ranges of Odonata has been attributed to climate warming elsewhere (e.g. Hickling et al., 2005; but see also Clark, 2008; Dingemane & Kalkman, 2008; Hassall, 2008 and a review [lacking data on Odonata] by McCarty, 2001).

Established or not?

Of course range extensions do not always indicate an established population, but they may be the first step. Bree (2005) suggested a fluctuating (unstable) northern limit for three species including *I. bastata* that represented major range extensions into Prince Edward County, Ontario. He also suggested that low winter temperatures prevented permanent establishment. Thus, during a warming trend, the process of northward expansion at any particular place on a northern range limit may involve a series of colonization and extinction events prior to permanent establishment.

A zone of "temporary invasion" (term originating with Clements in his classic 1905 "Research methods in ecology") may be the situation currently in southern Ontario for *I. bastata*. With time and/or a continuation in the warming trend, the populations may become permanent. None of the Ontario sites were definitely established populations that existed over a period of several years, and the only places where *I. bastata* has been collected in Ontario on different years are Pelee Island and Point Pelee. It is

likely that a population (several males and females seen) did exist and breed for one summer at some sites such as Sunset Beach in Essex, Big Otter Creek in Elgin, and definitely at Sandbanks in Prince Edward County where Bree (2005) found them in 2000 but not in four subsequent years. They were also not seen at Oldham's (Oldham, 2000) Wellington County site in subsequent years.

However, the large numbers observed in 2008 do seem to suggest a locally well established population. A total of 102 individuals were seen in the region of Almonte in 2008 by the author within a three hour period and without any well organized search. Only 76 were seen in Ontario prior to this and these were based on 20 records (unique date, collector, location). In addition, in 2008 the species was frequent and locally abundant in Prince Edward County where the author saw 10 at one location and other observers saw larger numbers. Surveys of habitats in subsequent years will be necessary to determine if and when these northern populations are well established.

Eastern Ontario and the Ottawa valley (as well as the southern Georgian Bay region) may be regarded as subunits of the Carolinian Zone of southwestern Ontario. With a climatic warming trend, species previously confined to the Carolinian Zone are likely to extend north of the zonal boundary and especially into these regions. With *I. bastata* we are likely seeing the first stage of this invasion.

Habitat

In the northern parts of its range, *I. bastata* is most often found in wet places with water 10–20 cm deep and a more or less dense cover of rushes (e.g. *Juncus articulatus*) and/or spikerushes (*Eleocharis* spp.) (Needham & Heywood, 1929; Walker, 1953). It sometimes occurs in the same seepage and springs as *Amphiagrion saucium* (Eastern Red Damsel) and in similarly small areas of several square meters. All of the sites near Almonte were marshes with 10–20 cm of water dominated by a low growth (to 30 cm high) of sedges and rushes (*Carex pellita* and/or *Eleocharis erythropoda* and/or *Juncus articulatus*). In some cases there were adjacent shallow pools to 20 cm deep with a sandy or gravel bottom and with clumps of *Chara*, this being the only macrophyte. One pool also had surrounding *Typha angustifolia* and *Lythrum salicaria*.

Although not listed as a species of vernal pools (Colburn, 2004), this species used water bodies in eastern Ontario that are definitely vernal in some years. In fact all of the sites have been completely dry in the summers of some years over the past decade, but in 2008 they had at least 10–20 cm of water all summer. Other Odonata emerging from these pools (Figure 2) where *I. bastata* occurred in early September 2008 included *Anax junius*, *Enallagma civile*,

Ischnura verticalis (Eastern Forktail), *Pantala flavescens* (Wandering Glider), *P. hymenaea* (Spot-winged Glider), and *Sympetrum costiferum* (Saffron-winged Meadowhawk). *Lestes congener* (Spotted Spreadwing), *L. disjunctus* (Northern Spreadwing), and *L. forcipatus* (Sweetflag Spreadwing) were present in numbers suggesting that they had also recently emerged from these pools. Earlier in the summer (1 June 2008) *Lestes dryas* (Emerald Spreadwing) was emerging from the same pools and marshes.

In 2008 the species was found also in Prince Edward County, where first found by Bree in 2000 (Bree, 2001). Here it occupied shallow pools (water 10 cm deep) on alvars and in roadside ditches with *Juncus articulatus* and *Deschampsia cespitosa*.

The shallow marshes and vernal pools on limestone are prevented from rapidly infilling with wetland vegetation because such vegetation is killed during periods of drought. Consequently organic matter accumulation is slow and a low nutrient status is maintained for a relatively long period. These alvar wetlands thus last longer than similar low nutrient and low vegetation wetlands in old sand and gravel pits and they are less susceptible to changes in ground and surface drainage than fens with similar low vegetation structure.

Identification

With their prominent dorsal process at the tip of the abdomen, the red-orange forewing pterostigma separated from the wing margin, and yellow color, the males are readily identified. The females are more difficult to identify. In the northern parts of the range, females of *I. hastata* may be confused with those of *I. verticalis*. Females of former are a little shorter and thinner being 20–25 mm long whereas *I. verticalis* females are usually over 25 mm long. Also the females of *I. hastata* have more orange (4th and 5th are mostly orange) than those of *I. verticalis* (4th and 5th segments mostly black). However, older females are more difficult to determine. Those of *I. hastata* are more black and the sides of the thorax are more pale. Furthermore females of *I. hastata* have a pit or folded area on the centre of each side of the pronotum when viewed from above which is lacking in females of *I. verticalis*.

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Figure 2. Sedges and rushes around the edge of a temporary pool (upper center near shrub) on the Burnt Lands Alvar where 30 Citrine Forktails (*Ischnura hastata*) were seen on September 2008.

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Back in the Bronx for 2008

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The Bronx is a borough of New York City with an estimated population of almost 1,400,000 people. It is the third most densely populated county in the US. One-fifth of the Bronx's area is park land. There are a variety of natural habitats here including rivers (Bronx, East Harlem and Hudson), lakes, forests and salt marshes. The Bronx lies at the western end of Long Island Sound. Having seen a variety of birds, mammals and butterflies in The Bronx I wondered about the variety of odonates here.

As a follow-up to the surveys for the New York Dragonfly and Damselfly Survey of 2007, surveys were conducted in 2008. The same sites were selected, the New York Botanical Garden (NYBG) and the Bartow-Pell Mansion (BPM). Within both sites additional areas were added: a forest trail at the NYBG and the salt marsh at BPM. A third survey site was also added, the salt marsh at Turtle Cove/Eastchester Bay (TCEB). The salt marshes were

added in an attempt to see if *Erythrodiplax berenice* (Seaside Dragonlet) was present in the Bronx and they were. *E. berenice* is the only odonate in North America to breed in salt marshes, a disappearing habitat on the East Coast.

Bronx County List 2008

Argia apicalis, Blue-fronted Dancer
Enallagma civile, Familiar Bluet
Enallagma geminatum, Skimming Bluet
Enallagma signatum, Orange Bluet
Ischnura posita, Fragile Forktail
Ischnura verticalis, Eastern Forktail
Anax junius, Common Green Darner
Erythemis simplicicollis, Eastern Pondhawk
Erythrodiplax berenice, Seaside Dragonlet
Libellula pulchella, Twelve-spotted Skimmer
Pachydiplax longipennis, Blue Dasher
Perithemis tenera, Eastern Amberwing
Plathemis lydia, Common Whitetail
Sympetrum sp., meadowhawk species
Tramea carolina, Carolina Saddlebags


Site

NYBG: 1, 2
NYBG: 3
NYBG: 3
NYBG: 3
NYBG: 1, 3 and BPM: 4
NYBG: 1, 3 and BPM: 4
NYBG: 1, 3 and BPM: 4, 5
NYBG: 1 and BPM: 4
TCEB and BPM: 5
TCEB and BPM: 4, 5
NYBG: 1, 2, 3 and BPM: 4
NYBG: 1, 3
NYBG: 2
BPM: 5
NYBG: 1

NYBG: Twin Lakes=1, Forest Trail=2, Conservatory Pools=3
BPM: Pool=4, Salt Marsh=5

At the NYBG Twin Lakes was surveyed on 26 May, 24 June, 16 July, 12 August, and 17 September. The 16 July survey produced a pleasant surprise, *Tramea carolina* (Carolina Saddlebags), probably a migrant. The ornamental pools at the Conservatory were surveyed on 24 April, 26 May, 24 June, 16 July, and 12 August, and the forest trail was surveyed on 24 June, 16 July, 12 August, and 17 September. The Conservatory pools were closed on 17 September in preparation for an upcoming exhibit. At BPM the ornamental pool was surveyed on 23 May, 28 June, 25 July, and 31 August, and the salt marsh on 25 July and 31 August. The salt marsh at TCEB was surveyed on 28 June and 25

July. Odonates were observed at all sites on all dates except at the NYBG on 17 September along the forest trail.

Rivers were not surveyed in 2007/2008 but they should be good sites for future studies of odonates as well as other wildlife. I did surveys on the Bronx River but they were in southern Westchester about three miles north of the Bronx and they were productive. The studies I did were conducted in the south and northeastern Bronx. Future studies will also be conducted at these sites as well as areas in the west Bronx. No specimens were collected but photos were taken of all species. 

Odonates in Vietnam, 2008

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For three weeks in June 2008 and into early July, I had the opportunity to sample insects in northern Vietnam. My main interest is with moths, but I always collect as many odonates as possible on such expeditions. The expedition for this year centered around Hanoi, going first to the nearby hill resort town of Tam Dao, at about 930 m elevation. The hills by Tam Dao are still forested and part of Tam Dao National Park, Vinh Phuc Province, getting to over 1500 m on some peaks. The village at Tam Dao is touristy but one can get into the hills and to nearby forest along a few of the roads there. The area is very wet so many small creeks and streams can be found. Accommodations at Tam Dao are only in village hotels. Tam Dao forests are very varied and include cloud forest above the village.

The second site was further north at Ba Be Lake, now part of Ba Be National Park, Cao Bang Province. The park headquarters is at about 240 m elevation, but surrounding hills go to over 1500 m. Much forest remains, but near the roads is primarily secondary. Ba Be has a park lodge and cabins to stay at. The forest at Ba Be is upland tropical forest on karst limestone hills.

The third main site was south of Hanoi at Cuc Phuong National Park, Ninh Binh Province. The park entrance area has the main lodge to stay at, about 155 m elevation. Parts of the park go to 600 m, and an interior lodge is also available at about 450 m elevation. This park is mostly lowland rainforest, one of the last intact remnants of this type of forest near Hanoi, with ample streams and wet areas. Most of the hills are also karst limestone.

A short stay was also made at Ba Vi National Park, very near to Hanoi. This is an unusual isolated peak rising 1256 m above the Red River plain west of Hanoi. We stayed at the lake lodge, at 220 m, but there also is a mid-elevation

lodge at 400 m, while at the end of the road up the mountain there is intact forest at 1150 m.


During this trip few odonates were taken, and most of the collecting was done at the lake in Ba Vi National Park. Bill Mauffray kindly checked the specimens to verify their identities. The following listing names the species obtained, including the very colorful *Aristocypha fenestrella* damselflies.

Ba Be National Park

Diplacodes trivialis (Rambur)
Gynacantha subinterrupta Rambur
Gynacantha bayadera Selys

Ba Vi National Park

Aristocypha fenestrella (Rambur)
Coeliccia yamasakii Asahina
Euphaea masoni Selys
Indocnemis orang (Forester)
Protosticta khasoidaeensis Asahina
Diplacodes trivialis (Rambur)
Orthetrum sabina (Drury)
Orthetrum testacea (Burmeister)
Rhyothemis variegata (Linnaeus)

This small sample from Vietnam is miniscule compared to the total fauna, but does show some of the variety to be found there. Vietnam should produce a lot of new material for research, since much of the country is not well known for insects. Local authorities can help with permits, and for my expedition arrangements were made with the Plant Protection Research Institute, in Hanoi (the Vietnam equivalent of our USDA). 

Tramea lacerata (Black Saddlebags)—Found in Nova Scotia

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Tramea lacerata (Black Saddlebags) is broadly dispersed throughout much of the United States as far north as Maine and ranges south into Mexico and has also been recorded from Hawaii (Dunkle, 2000). *T. lacerata* is also found in the Canadian provinces of Quebec, Ontario, and British Columbia. In eastern Canada the species lives only in extreme southern Ontario (Walker & Corbet, 1975). The species is a well known migrant in eastern North America but is not considered so in the West.

In Acadia, *T. lacerata* has previously been recorded from Maine. It was recorded in York County on 20 June 2001 by D.R. Paulson and N. Smith; in Kennebec Co. on 14 September 2002 and Lincoln Co. on 21 September 2004 by J. Mirick and J. Milan.

Here, I report the discovery and capture of two *T. lacerata* on 28 July 2008 at a small black spruce marsh bordered *Sphagnum* bog on the “Shearwater Flyer” trail off Hines Road in Eastern Passage, Halifax County, Nova Scotia (44.6262° N, 63.4983° W). The trail is a 2 km section of the Trans-Canada Trail network; this section connects Eastern Passage to Cole Harbour.

It was the large size and dark color that caught my eye; thinking male *Celithemis martha* (Martha’s Pennant) on steroids. At the time of capture the two specimens were flying with *Libellula quadrimaculata* (Four-spotted skimmer). One specimen was netted approximately 4–5 feet above my head catching insects on the wing. The second specimen was netted while perched on the tip of a dead tree in the bog.

New Records for Idaho and Wyoming

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As is our custom, after the great DSA meeting in Oregon, Phoebe and I took our time heading home. On the way to a week’s stay in Utah, we stopped at two sites in Idaho. Rock Creek was somewhat degraded, as most streams in cities are, but one of the three species encountered was a new record for Twin Falls County.

Idaho, Twin Falls County, City of Twin Falls, Rock Cr. @ Shoshone Street S, 7-VIII-08.

Argia vivida, Vivid Dancer
Enallagma anna, River Bluet

Monday, 4 August 2008, I was back on the same walking trail watching a *Pantala flavescens* (Wandering Glider) cruising and hunting over the field and occasionally approaching me on the trail. On one of its hunting runs it came within range and I made an attempt to catch it with my net. What happened next was unbelievable! As I made the swing above my head at the *Pantala*, out from opposite side of the trail attacked another large dragonfly, which I thought to be some type of darner. To my surprise I had caught another *T. lacerata*, minus the *P. flavescens*.


Tramea lacerata had not been recorded in Nova Scotia and/or the Atlantic Provinces before, so this is an addition to the known species in the province. This genus is “trans-migratory” and it’s not certain that there are suitable habitats for larvae in the province, so these may have just been vagrants from the south coming up along the Atlantic Coast.

Thanks to Paul Brunelle for his help in identifying this dragonfly and for providing input to my paper.

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*Sympetrum semicinctorum**, Band-winged Meadowhawk

Our next stop was at Burley, where I had noticed an interesting lake as we were driving west. At this site all 11 species were new records, as the Minidoka County list on OdonataCentral, <<http://www.odonatacentral.org>>, was found to be a big fat zero. In addition, one of the species netted was a new state record.

Idaho, Minidoka County, Burley, Emerald Lake, I-86 mile marker 210, 8-VIII-08.

*Lestes congener**, Spotted Spreadwing
*Enallagma carunculatum**, Tule Bluet
*Ischnura cervula**, Pacific Forktail
*Ischnura perparva**, Western Forktail
*Rhionaeschna multicolor*** , Blue-eyed Darner
*Anax junius**, Common Green Darner
*Erythemis collocata**, Western Pondhawk
*Libellula forensis**, Eight-spotted Skimmer
*Sympetrum corruptum**, Variegated Meadowhawk
*Sympetrum danae**, Black Meadowhawk
*Sympetrum semicinctorum**, Band-winged Meadowhawk

After our week's stay at Snowbird (no dragonflies—we were at 7,900 feet), we again started home. We made one stop in Wyoming, again at a spot I had noticed as we were going west. Only one species was seen here, but it proved to be a county record. The sky was quite overcast. Although there was trout fishing here, according to the sign, there was a lot of algae in the stream, and a slight but distinct odor of decomposing flesh was present.

Wyoming, Carbon County, North Platte River @ I-80, near mile marker 228, 16-VIII-08.

*Enallagma anna**, River Bluet


A single asterisk indicates a new county record for each of the sites above, while the double asterisk denotes the new record for the state of Idaho. All specimens of *Sympetrum semicinctorum* keyed to *Sympetrum occidentale* in Westfall

and May (1996), but herein I follow the suggestion of the DSA Checklist Committee (Paulson, 2007).

At the DSA meeting Steve Valley discussed the value of the members dispersing during field trips and thereby visiting a variety of spots, thus increasing the potential for finding new records. I heartily agree with this approach. And it certainly looks like Idaho is a state literally screaming for attention. Some years ago, Phoebe and I spent a week in the metropolitan area known as Emmett, a few miles northwest of Boise, and on that occasion we recorded 30 species. I have no idea how many of those were new, we didn't have OdonataCentral then, but I suspect there were several. I wonder whether Idaho shouldn't be considered as a site for the next DSA meeting in the western sector.

Voucher specimens for all species are housed in the Adult Odonata Collection of the Arkansas State University Museum of Zoology. I thank John Abbott for confirming the identification of the Vivid Dancer.

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Another Case of Westward Dispersal of African Odonates to the West Indies: *Tramea basilaris* Palisot de Beauvois Found in Martinique (FWI)

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Observations of dragonflies transported by winds across water over long distances are numerous (Corbet, 1999), and well documented for several species such as *Pantala flavescens* (Corbet, 1979) and *Ischnura hastata* (Cordero Rivera, 2005). Westward dispersals of an African dragonfly to the New World was documented in 2003 with several specimens of *Anax ephippiger* (Vagrant Emperor) that reached the South American continent and the West Indies.

In 2006, a teneral female *Tramea* sp. collected in Martinique puzzled me. I provisionally identified it as *Tramea onusta* (Red Saddlebags), based on the shape of the basal spots on the hindwings. However, it remained dubious to me until the following additional collections. In October 2008, I received from Gwenaël David and Bénédicte Thie-

baut, four more specimens of this curious *Tramea* which were collected in the southernmost part of Martinique. Two were mature males and they did not match any of the South American or Antillean *Tramea* spp. that I was aware of. I compared them with *Tramea* specimens from other parts of the world that we have in the collection at the Nantes Museum. The two males were finally identified as *Tramea basilaris*. This species is actually known from tropical Africa, Madagascar, India, and Asia to Malaysia where it is referred to as the Keyhole Glider. Two subspecies are recognized as *Tramea b. basilaris* and *T. b. burmeisteri*.

However, it is not the first record of this species in the New World. Belle (1988) recorded the capture of *Tramea*

basilaris burmeisteri at the international airport at Zanderji in Surinam. This observation was considered an accidental introduction. However, *A. ephippiger* is proof that prevailing winds make northeastern South America the most likely place for Afrotropical arrivals in the Neotropics. Also, trade winds blowing westward from Africa, and the regular monsoon system are especially suitable in transporting windborne propagules to the Neotropics such as *Schistocerca gregaria* (Desert Locust) which regularly reach the West Indies and the South American continent. It is interesting to note that a male *A. ephippiger* was also recently collected in St. Barthélémy in early October 2008.

The arrival of *T. basilaris* in the West Indies could have remained anecdotal if it had not been associated with the observation of reproductive behaviour. In October, several females were seen ovipositing in man-made basins near Trois-Ilets, in southern Martinique. These coastal basins contained brackish water. Pairs would fly over the water surface for a few minutes. Then the female would leave the tandem and oviposit alone with the male flying behind at approx. 60 cm. This new record brings the total number of species recorded in the French West Indies to 41.


Thanks to Gwenaël and Bénédicte, tireless naturalists, for collecting the specimens.

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[See the photo of *Tramea basilaris* on the front cover of this issue. Ed.]

***Brachymesia herbida* (Tawny Pennant) in New Mexico**

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Bitter Lake National Wildlife Refuge in southeastern New Mexico is well known for producing unusual Odonata records. During the afternoon of 17 August 2008, I spent 2–3 hours photographing Odonata along the tour loop at the refuge. It was a partly cloudy day, the winds were calm and the temperature was about 21°C during the photographic period.

When I got home and started sorting out the images and identifying the species photographed, I discovered two images of an apparent Tawny Pennant, *Brachymesia herbida*. Realizing that I had a potential first state record, I immediately contacted Dr. John Abbott and Dr. Dennis Paulson with the photos and both confirmed the identification.

Abbott (2007) indicates that the nearest record for *B. herbida* is from Presidio County, Texas. The northernmost record in OdonataCentral appears to be from Cass Co., Nebraska. The species ranges from southern Texas and southern Florida south through Central America to



Argentina. This occurrence constitutes a first record for New Mexico and by only about 15 km, a new westernmost record for the United States.


I used a Nikon D-40X digital camera with an AF-S VR Zoom-Nikkor 70–300mm f/4.5–5.6 G IF-ED lens. Data automatically recorded and stored with the image files

indicate that the images were recorded at 300 mm focal length, 1/320 second exposure with an f/14 setting at an ISO speed of 800.

Other species photographed or seen (*) at Bitter Lake on the 17th include: Blue-eyed Darner (*Rhionaeschna multicolor*), Four-spotted Pennant (*Brachymesia gravida*), Halloween Pennant (*Celithemis eponina*), Checkered Setwing (*Dythemis fugax*), Western Pondhawk (*Erythemis collocata*), Seaside Dragonlet (*Erythrodiplax berenice*), Comanche Skimmer (*Libellula comanche*), Bleached Skimmer (*Libellula composita*), Widow Skimmer* (*Libellula luctuosa*), Flame Skimmer (*Libellula saturata*), Marl Pen-

nant (*Macrodiplax balteata*), Blue Dasher* (*Pachydiplax longipennis*), Wandering Glider (*Pantala flavescens*), Desert Whitetail (*Plathemis subornata*), Variegated Meadowhawk (*Sympetrum corruptum*), Black Saddlebags* (*Tramea lacerata*), and Red Saddlebags (*Tramea onusta*).

References

Abbott, J.C. 2007. Odonata Central: An online resource for the distribution and identification of Odonata. Texas Natural Science Center, The University of Texas at Austin. Available at: <<http://www.odonatacentral.org>> (accessed 10 September 2008). 

Sedgwick County, Kansas Record of *Miathyria marcella* (Hyacinth Glider)


Roy Beckemeyer, Wichita, Kansas <roybeckemeyer@cox.net>

I have been doing Odonata and Diptera: Asilidae (Robber Fly) surveys of the Wichita State University Ninescah Field Station in Sedgwick County, Kansas (37° 33' N, 97° 41' W). The field station, located about 35 miles southwest of Wichita, Kansas, comprises 330 acres of native and restored prairie, wetlands, and riparian woodland along a mile of the Ninescah River.

While collecting at the site on 26 September 2008, I collected a mature male specimen of *Miathyria marcella* (Hyacinth Glider). The specimen was taken in prairie, perched on vegetation in a patch of big bluestem and sunflowers. Other species of Odonata collected that day included *Perithemis tenera* (Eastern Amberwing), *Pachydiplax longipennis* (Blue Dasher), *Sympetrum ambiguum* (Blue-faced Meadowhawk), *S. corruptum* (Variegated Meadowhawk), *Libellula luctuosa* (Widow Skimmer), *Tramea onusta* (Red Saddlebags), *Argia apicalis* (Blue-fronted Dancer),

Enallagma civile (Familiar Bluet), *Ischnura verticalis* (Eastern Forktail), *I. posita* (Fragile Forktail), and *Calopteryx maculata* (Ebony Jewelwing). In addition, many feeding swarms of *Anax junius* (Common Green Darner), *Pantala flavescens* (Wandering Glider), *Tramea onusta* (Red Saddlebags), *T. lacerata* (Black Saddlebags), and *Sympetrum corruptum* (Variegated Meadowhawk) were working in the prairie and along the hedge rows.

This appears to constitute the northwesternmost record for *M. marcella*, a tropical species. It was found just a couple of weeks after hurricane Ike's traverse of the central US and was most likely carried up by the associated weather systems.

The specimen will be placed in the University of Kansas Natural History Museum, Entomology Division collection. 

Straight-tipped Ringtail (*Erpetogomphus elaps*) found in Arizona

Doug Danforth <danforthdg@aol.com> and Rich Bailowitz <raberg2@q.com>


Two species of *Erpetogomphus* are common in Arizona. Most widespread is White-belted Ringtail (*E. compositus*), a ubiquitous low altitude species. Also common is Serpent Ringtail (*E. lampropeltis natrix*), found mostly in central and southeastern Arizona uplands. On 17 September 2008, the authors visited lower Parker Canyon in Santa Cruz County, Arizona. This location, no more than 15 Km north of the US border, seems to be something of a Mecca for influx and vagrant species from the south, having already yielded records of Mayan Setwing (*Dythemis maya*) and Carmine Skimmer (*Orthemis discolor*) in past years.

A ringtail was seen perched on a midstream rock in the canyon. It was immediately identified as *Erpetogomphus elaps* by the observers, both of whom are familiar with the species in Sonora. After taking some photos, the specimen was collected as a voucher.

Except for one dark brown dorso-lateral stripe, *E. elaps* has an almost unmarked, bright green thorax. The cerci are light colored and straight, with a slight droop at the tip. The sharply curved epiproct intersects the cerci about midway. The range of *E. elaps* extends northward in Sonora to the area around

Yécora in the east central mountains where it has been found as high as 1500 meters. Near its upper altitudinal limits, it is a companion species to *E. l. natrix*, with which it was flying at its Arizona location. At its lower altitudinal limits, it is often on the wing with both *Erpetogomphus bothrops* and *E. l. natrix*. It is a species of open, rocky, mountain streams and can be quite numerous at times in Sonora.

The sighting follows on the heels of Hurricane Lowell

which passed over central and southern Sonora as a tropical depression. The hurricane remnants then lifted across southern Arizona. With such a huge jump from its known range in east-central Sonora and southward, it seems it would need an assist, like the push of a tropical storm, to bring it into Arizona. 

[See Doug Danforth's photo of *Erpetogomphus elaps* on the back cover of this issue. Ed.]

A Season at the Horn

Tom Kogut, Packwood, Washington <tkogut@myhome.net>

The Yakima River Horn in eastern Washington, also referred to as Horn Rapids, is arguably the best location in the state for finding uncommon odonates. The Yakima River makes a north to south U-turn at this site, where it is backed up by a low head dam before turning south to the city of Richland and its confluence with the Columbia River. The Horn has been a well-known odonate Mecca for many years, and hosts several dragonfly species that are very difficult to find elsewhere in Washington, including *Erpetogomphus compositus* (White-belted Ringtail), *Gomphus lynnae* (Columbia Clubtail), *Ophiogomphus occidentis* (Sinuous Snaketail), *Stylurus olivaceus* (Olive Clubtail) and *Macromia magnifica* (Western River Cruiser).

Another factor that makes this area so attractive is the easy access provided by Benton County's Horn Rapids Park, located on the west bank of the river. The park features a boat launch and hiking trail that parallels the river for approximately one mile, and connects to another trail originating at the Horn Rapids Dam parking lot upriver. These trails provide access to a variety of habitat features including riparian woodland, open grass/sagebrush flats, and grass/shrub areas featuring willows and dense patches of rose. There are also numerous invasive plant and animal species present, including some large Common Carp (*Cyprinus carpio*) and numerous American Bullfrogs (*Rana catesbeiana*) in the river.

My first visit to the Horn, a two hour drive from my residence in western Washington, was on 27 June 2008, where I found large numbers of *Calopteryx aequabilis* (River

Jewelwing), which were abundant along the river's edge, along with many *Gomphus lynnae*, most of which were perched on the gravel trail. Several *Macromia magnifica* were patrolling the river, offering unsatisfactory, fleeting views. Two *Ophiogomphus occidentis* were observed on trailside shrubs.

I was so impressed with the abundance and diversity of dragonflies at The Horn that I decided to make regular visits over the course of the summer, which provided an



Macromia magnifica (Western River Cruiser)

opportunity to record the ebb and flow of species until late August. To my knowledge, this had not been done before, as most visits are short-term trips focusing on target species. The following table displays first and last observation dates, for the seven field visits which ended on 29 August. Added with asterisks are additional species and dates supplied by Dennis Paulson from the Yakima River, at or near Horn Rapids, from 18 visits between 1971 and 2007. Also included are additional dates (in italics) from his visits that extend records before and after the dates I recorded.



Calopteryx aquabilis (River Jewelwing) 27 June–19 July (21 July) Yakima River, Washington

Archilestes californicus (California Spreadwing) 29 August (21 August)

Argia emma (Emma's Dancer) 27 June–29 August (18 June)

**Argia vivida* (Vivid Dancer) (21–26 August)

Enallagma carunculatum (Tule Bluet) 27 June–29 August

Enallagma sp. (Northern/Boreal Bluet) 04–19 July

**Enallagma annexum* (Northern Bluet) (21 July–9 August)

**Enallagma boreale* (Boreal Bluet) (12 July–26 August)

Ischnura cervula (Pacific Forktail) 23 August (06–26 August)

**Ischnura perparva* (Western Forktail) (13–24 July)

**Anax junius* (Common Green Darner) (03–13 July)

Aeshna sp. (mosaic darner) 27 July–01 August

**Rbionaeschna californica* (California Darner) (18 June)

Rbionaeschna multicolor (Blue-eyed Darner) 16 August (18 June–26 August)

Erpetogomphus compositus (White-belted Ringtail) 01–23 August (11 July–26 August)

Gomphus lynnae (Columbia Clubtail) 27 June–01 August (18 June–11 August)

Ophiogomphus occidentis (Sinuous Snaketail) 27 June–01 August (18 June–26 August)

Stylurus olivaceus (Olive Clubtail) 16–29 August (13 July)

Macromia magnifica (Western River Cruiser) 27 June–16 August

Erythemis collocata (Western Pondhawk) 27 June–29 August

Libellula forensis (Eight-spotted Skimmer) 27 June–29 August (18 June)

**Libellula pulchella* (Twelve-spotted Skimmer) (17–21 July)

Pachydiplax longipennis (Blue Dasher) 19

July (18 June–21 August)

**Pantala hymenaea* (Spot-winged Glider) (9 July–16 August)

Plathemis lydia (Common Whitetail) 04 July–23 August

Sympetrum corruptum (Variegated Meadowhawk) 16–29 August (13 July)

**Sympetrum costiferum* (Saffron-winged Meadowhawk) (24 July–26 August)

Sympetrum pallipes (Striped Meadowhawk) 01–29 August

Sympetrum semicinctum (Band-winged Meadowhawk) 27 June–29 August (18 June)

Tramea lacerata (Black Saddlebags) 19 July–16 August (11 July–17 August)


The summer of 2008 was a relatively cool one in Washington, punctuated by some short-lived hot periods, so my 2008 observations may not be typical of "average" summer conditions. During 2008, the best time to visit the Horn to observe the greatest diversity of gomphids and West-



Ophiogomphus occidentis (Sinuous Snaketail)

ern River Cruiser was early August, when at least four of the five target species were present. The most difficult species to locate by far was *Stylurus olivaceus*, which was only observed hanging up in one small patch of dense rose shrubs south of the county park boat landing. I detected only one individual *S. olivaceus* on three consecutive visits in August, although Greg and Cheryl Lasley (the only other "ode people" I ran into all season) detected four *S. olivaceus* on 15 August, hanging up in the same dense area of rose. My final observation of this species, and the only one in which photographs were obtained, was on 29 August when I located a male preying upon an unfortunate *Archilestes californicus*. Interestingly, although most odonates were active much earlier in the morning, all *S. olivaceus* observations occurred after approximately 11 AM, even on very warm days.

A summer visit to the Yakima River Horn is not likely to disappoint anyone interested in dragonflies or general natural history. Camping is readily available at the county park (it never appeared to be full, even on holiday weekends although shady campsites are limited) for those wishing to spend several days. Alternatively, there are plenty of hotel rooms in Benton City or Richland, both of which are located within 15 miles of the Horn.

My sincere thanks to Dennis Paulson for supplying his Yakima River records and for a detailed review of this report. 

[See Tom Kogut's photo of *Erpetogomphus compositus* (White-belted Ringtail on the back cover of this issue. Ed.)

Book Review: Field Guide to the Dragonflies and Damselflies of Algonquin Provincial Park and the Surrounding Area. Colin D. Jones, Andrea Kingsley, Peter Burke, and Matt Holder. Algonquin Field Guide Series. Published by the Friends of Algonquin Park, PO Box 248, Whitney, Ontario K0J 2M0. Price \$28.95 Canadian. ISBN 978-1-894993-29-6

Reviewed by **T. Donnelly**


At last we have available a field guide that strikes me as being the best single guide for eastern Canada and the northeastern US. The title might suggest that the guide is useful for a rather limited area, but people as far away as western Ontario, Minnesota, West Virginia, or New Jersey will encounter relatively few species that are not found in this book. I would judge that any odonatist in this large area would find this the most useful single guide.

The guide starts with morphology, with line drawings showing clearly the features that are used in the descriptions. The next section discusses life history, (larval life and emergence), and behavior of adults. The several families are described carefully. The bulk of the book is devoted to complete species descriptions, typically one or two species to each pair of facing pages. The species are illustrated in color, with many line drawings showing important details. The quality of the illustrations is very high. In several places groups of species that commonly cause confusion among beginners are discussed together, comparing in table form the diagnostic characters appropriate for the group. The diagnostic hints bespeak of considerable experience among the authors.

I commend the authors for discussions of topics generally omitted from guides at this level. For example, they show that most gomphids (Clubtails) go through considerable color change during their maturation, so that color

by itself is a poor diagnostic character. Where species are variable (e.g. in wing markings) this fact is mentioned and in many cases illustrated, so that users will realize that they are observing a single species, rather than two or more. In cases where intergradation blurs the boundaries between species, this problem is discussed.

I have only a few quibbles with the book. Wing venation is illustrated sparingly. I would have preferred to see it emphasized more, and illustrated at a larger scale, simply because beginners can usually see salient venational characters very easily. I am not certain why a female was chosen for the color figure of *Epiaeschna beros* (Swamp Darner). Additionally I think it might have been wise to include some widespread common species that just miss the target area (e.g. *Hetaerina americana* [American Rubyspot], *Calopteryx amata* [Superb Jewelwing], *Lanthus parvulus* [Northern Pygmy Clubtail]), not because they may finally be found within this area, but because many of the people that will buy and use this book will find these species in nearby areas.


I think this is a superb book and that it will find a widespread audience. I wish something like this had been available when I started. Even after decades of study I picked up several new hints that I will find useful when summer reappears. 

Recent Articles and Books

Dragonflies and Damselflies: Model Organisms for Ecological and Evolutionary Research, Edited by Alex Córdoba-Aguilar, Oxford University Press, 2008. Hardback, ISBN13: 9780199230693, 288 pp. \$130.

From the Press: Dragonflies and Damselflies documents the latest advances in odonate biology and relates these to a broader ecological and evolutionary research agenda. Despite being one of the smallest insect orders, dragonflies offer a number of advantages for both laboratory and field studies. In fact, they have been crucial to the advancement of our understanding of insect ecology and evolution. This book provides a critical summary of the major advances in these fields. Contributions from many of the leading researchers in dragonfly biology offer new perspectives and paradigms as well as additional unpublished data. The editor has carefully assembled a mix of theoretical and applied chapters (including those addressing conservation and monitoring) and achieves a balance of emerging and established research topics, providing suggestions for future study in each case.

This accessible text is not about dragonflies per se but an essential source of knowledge that describes how different

sets of evolutionary and ecological principles/ideas have been tested on a particular taxon. It will therefore be suitable for graduate students, and researchers in entomology, evolutionary biology, population and behavioral ecology, and conservation biology. It will of course be of particular interest and use to those working on insects and an indispensable reference for odonate biologists. 

Renewal Reminder

This is the final issue of the volume, so it's that time of year again. Please renew your membership in a timely fashion, unless you have already paid for 2009 or beyond. If you are unsure of whether you need to renew or not, check the address label on the envelope. If you see "A8" in the upper right corner, it means that your membership expires with this issue. Also remember the PDF-only option available for ARGIA at a reduced rate. Use the form included with this issue or visit <http://www.odonatacentral.org/index.php/PageAction.get/name/DSA_Membership>.

Dragonfly Poetry

Ken Tennesen <ktennessen@centurytel.net>

Prompted to write poems about dragonflies, and fascinated by huge mystic eyes, arrays of colors, the intricate architecture of the wings, and their aerial maneuverability, a small group of central Wisconsin poets put their newfound feelings and mental images into words.

The group met on a sunny day in August, on a pontoon boat on Fish Lake in Waushara County, to read their poems to each other. During the readings, dragonflies, including pennants, pondhawks and bluets, flew out to the boat and landed on the poets, deepening the experience. The result of this encounter, a small collection of seven poems, is presented here.

Flight

A nymph dreams
Of mythic kin,
Of fiery breath
And slashing tail
'Till water breaks
And earth falls back.
Swimming in air,
He captures the sun's fire
In eye and wing.
The dragon finds the sky.

Lauretta Kaplan

Brief Encounter

A dragonfly lands
on my hand.
Did I will it to come?
Like a fashion model
on the runway, it pauses
to show off its beauty.
Webbed, moonlight colored
wings, like an Irish fairy.
The body beneath sleek,
exquisite architecture.
Yet some old enmity
between man and insect

thrusts the thought
"Beauty and the Beast"
within this one entity.
Thought received, it
takes wing, insulted.
A magic moment gone.

Barbara Fitz Vroman

Uplifted

With wings like
shattered glass
of churches,
distressed,
in sweating sand,
the dragonfly
finds rest.
Then bursts
with aspiration
to fly,
delighting
the weary eye
it passes by.

Nan Gellings

Ultimately Captured

Red dragonfly flits and hovers,
dodges and zooms,
through skill or luck escapes
water beetles and loons,
yellow garden spiders,
a hungry Least Grebe,
and unknowingly tempts
a pouting bull frog.
Red dragonfly
out-maneuvers robber flies
through rushes and reeds
and is finally captured
in an instant
by a Nikon.

Julie Eger

Dragon's Eyes

Prehistoric orbs
Peer deeper into their void
Primal fears mirrored

Carl Merola

Optical Delusion

With your ghostly eyes of many facets,
I wonder, my ancient friend...
What do you see?
As you hover over meandering stream,
Or soar on summer zephyrs...
What do you see?
Silently perched upon a cattail,
Searching for your prey...
What do you see?
Do you glimpse but one blaze in the sunlit sky,
Or rather, sense a million tiny jewels...
Glistening bright in your mind?

Carl Merola

Parallels

Spindly birch dapple
the darkening backdrop,
Green Darners raking over them,
catching and crunching mosquitoes
in sickle-sharp jaws forged
before Jurassic time.
Nearby, in a dimming hangar,
mechanics lean against
their dismantled metal –
a propeller, a fatigued fuselage –
chew on sandwiches and
whether Orville and Wilbur
were really the first, then
drift into a late afternoon nap.
The Green Darners hang up
in the dimming swamp,
on schedule, fueled
for tomorrow's journey south.

Ken Tennessen



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 the 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.

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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.

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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.)

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Back cover: (upper) *Erpetogomphus elaps* (Straight-tipped Ringtail) photographed at Parker Canyon in Santa Cruz Co., Arizona, on 17 September 2008 and representing a new US species. Photo by Doug Danforth. **(lower)** *Erpetogomphus compositus* (White-belted Ringtail) photographed at Horn Rapids on the Yakima River in eastern Washington. Photo by Tom Kogut.



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Volume 10 of The Bulletin of American Odonatology has been completed and we are currently working on material for the first issue of volume 11. If you need to renew your subscription or if you would like to start one, please indicate below.

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