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THE DRAGONFLY SOCIETY OF THE AMERICAS

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

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

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

MEMBERSHIP IN THE DRAGONFLY SOCIETY OF THE AMERICAS

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

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

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

Cover: *Gomphus minutus*, Suwanee River, Georgia. The Southeastern DSA trip provided a fine opportunity to find the small southeastern species of *Gomphus*. Photo by Nick Donnelly

ARGIA - The News Journal of the D.S.A.

In This Issue.

Winter did not arrive in the Northeast until March, and then it never seemed to leave. Now the summer is upon us and a fine season is beckoning. By the time you receive this, you will probably already be in your way to the Annual Meeting in West Virginia. I hope to see you there. Following this are some interesting meetings scheduled for July and August.

The DSA Southeastern field trip at Eglin Air Force Base was a welcome break from the relentlessly cold, wet days in the North. Ailsa and I found five little *Gomphus* species that are the speciality of this area in the early Spring. Jerrell's article describes a wonderful trip to the pine woods, springs, seeps, and small streams of Eglin Air Force Base.

A brief visit to Arkansas for the DSA meeting in mid May provided another brush with winter, but dragonflies can be found there even on cold days.

We have two accounts of events, each entitled "Dragonfly Days". The first article describes the event in McAllen TX, and the second article describes the Roswell NM meeting, which will be repeated this year. Maybe we will have to sort out the ownership of this term!

While most of us were shivering this winter, Julie Craves was visiting Cuba, for what was primarily a bird trip. She managed to see a great many dragonflies. Can we foresee a Cuban group dragonfly trip in the future?

Ailsa and I revisited Uganda, this time with Peg and Fred Sibley. A fine time was had by all, both from the dragonfly standpoint and the animal and bird spotting standpoint. Seeing dragonflies in other parts of the world helps to put our North American fauna in a more satisfying perspective.

Another Odonata group has been formed; this time in California. I hope we can look forward to a DSA meeting there in the near future, so that we all can participate in the growing activity out there.

There are many new records to report this year, mainly in the Western United States. Not to be outdone by his western colleagues, Richard Orr has found a mysterious and apparently new *Ophiogomphus* in Maryland. The information is too preliminary to be included in the body of this **ARGIA**, and we anxiously await more information, as well as further specimens.

I have set a cut-off date for information for the dot-map project. I will include information received until 1 October of this year. I hope that we can bring some of the more poorly known areas up to scratch. The mechanics of producing the final maps will be difficult, and it is unlikely that there will be a second edition.

Among the remaining information in this issue, we report on a wonderful new book: *The Nikula - Sones Beginner's Guide to Dragonflies*, which is a fine addition to our growing book shelf.

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2002 GREAT LAKES ODONATA MEETING - 1 - 4 JULY 2002

Mark O'Brien

Previous announcements have appeared in **ARGIA**.

Meeting place: Roscommon MI.

For more information or to be put on the mailing list for a registration form, contact Mark O'Brien via email at: mfbrien@umich.edu or call 734-647-2199. You can also send mail to Mark at: Insect Division, Museum of Zoology, University of Michigan, Ann Arbor, MI 48109-1079.

PREREGISTRATION IS REQUIRED FOR THIS MEETING.

Additional updates on the meeting will be available on the web at:

<http://insects.ummz.lsa.umich.edu/GLOM2002/>

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MICHIGAN ODONATA SURVEY FIELD TRIP TO LOST NATIONS STATE GAME AREA, HILLSDALE CO. MI, 3 AUGUST 2002

The Lost Nations State Game area is a seldom-visited area just north of the Indiana border. It contains a large fen, small streams, ponds, marshes, old fields, woodlands, and the headwaters of the Maumee River.

For information contact Mark O'Brien at 734-647-2199 or mfbrien@umich.edu

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TUG HILL PLATEAU DRAGONFLY FIELD TRIP, 12-13 JULY 2002

Nick Donnelly, 607-722-4939;
tdonnel@binghamton.edu

The incentive for this field trip is the planned acquisition of the core area of the Plateau by the Nature Conservancy. I have visited this area on two TNC field trips and found it extremely attractive.

The Tug Hill Plateau is a virtually uninhabited forested area about 2000 feet elevation at the junction of Lewis, Jefferson, and Oswego Counties. A glance at a topographic map of New York suggests that it is merely a topographic outlier of the Adirondack uplift, separated from the Adirondacks by the valley of the Black River. However, it is much less developed and more primitive than the Adirondacks. Until recently the core area was owned by a major lumber company, and access has been severely restricted.

The most significant aspect of the Plateau is the very high precipitation. The winter precipitation is well documented, because the plateau is considered the finest snowmobiling in the east. The plateau has the highest snowfall east of the Rockies. The summer precipitation has not been documented (no one lives there; hence, no rain gauges) but is certainly much higher than anywhere else in New York and possibly also New England. The reason is simple: the plateau sits directly east of Lake Ontario, which is an excellent source of humidity for the orographic precipitation that feeds the headwaters of eight rivers, and the plateau abounds in streams, small rivers, bogs, ponds, etc. Zoological surveys have only just begun. Already both species of three-toed woodpecker have been found, and there is little doubt that many northern odonates will be found there.

This plateau is perhaps the last major unsurveyed area for Odonata in the northeastern United States. My contacts in the Nature Conservancy are enthusiastic about the prospect of an Odonata inventory of this area and have agreed to guide us to some localities that I have not yet visited myself.

We will gather on Thursday evening in Lowville. Participants arriving Friday can meet us for the second day and for Sunday.

We will be staying at the Ridge View Motel in Lowville, on highway 12. The telephone for the motel is 315-376-2252. The rates are \$59 per room providing that we will fill 5 or more rooms.

When you call to make a reservation tell them it is the Dragonfly Society group. There are lots of places for meals.

PLEASE E-MAIL ME WHEN YOU HAVE MADE YOUR RESERVATION.

For camping, I recommend Whetstone Gulf State Park. Reservations for camping can be made on the web. The web address is:
<http://nysparks.state.ny.us/reserv/>

I am planning a two-day meeting, with the option of an additional day. One day will be spent in the core area of the plateau. The second day will focus on the downstream portion of one of the rivers that flow from the plateau. There are additional Odonata attractions. The only (at least known to me) record of *Erythrodiplax berenice* away from saline water (except for strays in central Florida) is along the Lake Ontario shores (where there are additional attractive sites protected by the Nature Conservancy. The entire area of three counties is very rich odonatologically.

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MICHIGAN BIOBLITZ 18-20 AUGUST 2002

The Nature Conservancy of Michigan is hosting two rapid ecological inventories of Camp Owasippe in northern Muskegon County. [The first one has already occurred, but there is a second one in August. ed.] Over the course of two 3-day periods this summer, teams of ecologists, natural resource professionals, and some very good amateurs will conduct targeted, rapid, and detailed field inventories in areas likely to support high quality plant and animal populations, exemplary natural communities and their associated ecological processes. We will go to specific areas of Camp Owasippe that have been prioritized for fieldwork through map and aerial photograph landscape analysis.

Goals & Purpose: Targets will include high quality, representative and restorable oak-pine barrens, dry sand prairies, coastal plain marshes, and other areas likely to support biodiversity "hotspots" and wildlife habitat. Although we are interested in locating populations of rare reptiles, plants, and insects (particularly lepidopterans associated with prairie and barrens communities), we are very interested in documenting as many species as possible from all taxonomic groups. The long-range purpose of the Bioblitz is to provide much needed baseline data on the natural features of Camp Owasippe, so that The Nature Conservancy can advise and assist the camp in managing their lands to benefit biodiversity; The Nature Conservancy does not own Camp Owasippe.

Where: Camp Owasippe covers 4,500 acres in north-central Muskegon County. It borders Big Blue Lake, White River, as well as the Manistee National Forest.

When: May 16-18 (Thursday - Saturday) [This has already occurred!] and August 18-20 (Sunday - Tuesday).

We Offer: Housing will be in 4-bunk cabins, space is limited. Tent camping is available with access to facilities. Food will be provided for all participants. You Provide: Your incredibly valuable time, expertise and knowledge. We are counting on you to help us collect field data, including species lists, site descriptions, and natural resource data for our site conservation plans and long-term management and monitoring.

So, you want to help? We'd love for you to come for both 3-day events, but we will appreciate your assistance for even a single day. Please complete the attached Bioblitz Response Form to let us know when you can join us. You may also e-mail us at lkramarz@tnc.org or call us at (616) 776-0230. We will provide you with a Reservation Form to get specific travel and lodging information.

We will provide field data forms and protocols, but we are also relying on your expertise to help us in this regard. If you have time-tested field forms, methodologies, and field gear, please let us know.

Please note: Any specimens collected during the Bioblitzes may remain with the collector. This is subject, of course, to any Michigan Department of Natural Resources permit requirements for state-listed resources. Specimens that are federally protected, such as the endangered *Lycaeides melissa samuelis*, cannot be collected.

We look forward to meeting and working with you and thank you for volunteering your valuable time.

Lara Kramarz
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2ND ANNUAL DRAGONFLY FESTIVAL, ROSWELL NM, 14- 15 SEPTEMBER 2002

The Friends of Bitter Lake National Wildlife Refuge are sponsoring the second of this popular

event in Roswell. This "hot spot" has yielded one of the longest lists of dragonfly species in the southwestern United States, and the festival promises again to be a popular event. There will be many other activities. The web site is <http://www.rt66.com/~kjherman/fbl/df.html>.

Information can also be found by contacting dragonflyfest@hotmail.com or by phoning the Refuge Headquarters at (505) 622 6755 ext 16.

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2002 SE MEETING at EGLIN AFB, FLORIDA

Jerrell J. Daigle and Theresa Thom

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Theresa.Thom@eglin.af.mil; 850/882-4164 ext. 371

The 2002 Southeast Regional Meeting was held at Eglin Air Force Base in Niceville, Florida, from March 29-31. It was followed by a sidetrip to Monroeville, Alabama from April 1-4. The Hamilton, Alabama portion was cancelled due to inclement weather.

Attendees included Theresa Thom (our host), Don Ray, Bruce Furlow, and Jerrell J. Daigle from Florida. Carl Cook came down from Kentucky and Duncan Cuyler arrived from North Carolina. They were followed by Mary Jane and Steve Krotzer from Alabama. But the real snowbirds were Ailsa and Nick Donnelly from New York, Mike Thomas from Connecticut, and Don Miller from Vermont! A truly great group of enthusiasts, all ready for adventure!

The purpose of our trip was to help Theresa, the Base aquatic biologist, with a species-level inventory for several sites on Eglin AFB and to look for the adults of the new Florida *Ophiogomphus*. We were able to add many new records for the base, such as *Cordulegaster sayi* (courtesy of Nick), *Tachopteryx thoreyi*, *Gomphus hodgesi*, *G. westfalli*, *Hylogomphus geminatus*, *Epitheca costalis*, and *Enallagma davisii*.

Our adventures started with an introductory video shown at Jackson Guard, which goes through a brief history of the base beginning in the 1930s when the Department of Defense purchased the land from the Forest Service. More importantly, it reminded us that Eglin is a weapons testing facility and there is much unexploded ordinance on the Eglin Reservation. We were instructed to avoid touching or picking up any of these items, our permits were reviewed, we signed in, and we were off!

Sampling on Eglin Air Force Base is an adventure in itself. Many of the roads are poorly marked - in

fact we got an unintended tour of a now abandoned runway! Located in the coastal plain, sandy roads fit for a four-wheel drive vehicle lead the way across this 464,000 acre installation. We were treated to an amazing landscape, including the largest continuous old-growth longleaf pine (*Pinus palustris*) ecosystem left in the Southeast! Department of Defense installations like Eglin contain some of the best remaining habitats for our nation's vulnerable plant and animal species. As part of the Defense Department's Legacy Resource Management Program, partnerships with the Fish and Wildlife Service and other agencies have been formed to help address issues surrounding biological diversity as directed by Congress. With 5 resident species and 5 seasonal species listed as federally threatened or endangered including the endangered Okaloosa Darter (*Etheostoma okaloosae*), as well as over 160 rare or imperiled plants and animals, Eglin managers have their hands full! This diversity is not limited to plants and animals... it includes our six-legged, winged friends, like *Ophiogomphus* and *Cordulegaster*.

We found a good stream site for *Ophiogomphus* larvae. The habitat is sandy oak and pine uplands with the small sandy clear seepage streams averaging about 18 degrees Centigrade all year. The larvae were found in areas of pea-sized quartz gravel. Assisted by the expertise of Carl Cook, Theresa and Don Ray were able to dredge and return many *Ophiogomphus* larvae (3 size classes and one exuvia) to the small stream. However, despite our best efforts on this hot sunny day, we did not even see a vapor trail of the elusive adult *Ophiogomphus*! We were evidently too early but we will try again next year!

One evening, we ate at the local Chinese restaurant and conducted our business meeting over sushi, egg rolls and orange sherbet ice cream (Jerrell's favorite, but not as good as the Dairy Queen). The main order of business was to select the site for next year's SE meeting from several proposals. We voted on North Georgia during the Memorial Day weekend with Bill Mauffray as the host.

Other memorable moments included the die-hard taxonomists, including Carl Cook, who used his gasoline generator to power up the microscope light source to continue with larval identifications using the battery powered emergency lights to see the dichotomous keys! We weren't going to let the loss of power due to a thunderstorm interrupt groundbreaking scientific discovery! Hunger pains finally did postpone our larval taxonomy—but only for an hour and a half before we set up shop in the motel.

A small rowdy group consisting of Carl Cook, Duncan Cuyler, Don Miller, and myself went to Monroeville to look for the Alabama *Ophiogomphus*. Our primary site, Limestone Creek, was flooded, so we went to another site, Choctaw Creek near Gosport. While we didn't see any adult or larvae *Ophiogomphus*, we did have a great time catching species such as *Gomphaeschna furcillata*, *Epitheca costalis*, *Helocordulia selysii*, *Gomphus hybridus*, *G. lividus*, and *Didymops transversa*. Hopefully, we will have better luck next year.

All in all, it was a great trip! We saw new habitat and met new friends! Our thanks go to Theresa Thom and Don Ray for organizing the survey and for guiding us on Eglin. We hope to help them again next year.

Aloha! See you'll at the SE meeting in Georgia .

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ODES IN A COLD CLIMATE – THE DSA ARKANSAS OUTING

Nick Donnelly

Were we ever lucky to be in Glenwood, Arkansas, on the weekend of 18-19 May! We watched the Weather Channel on our motel TV, congratulating ourselves for having just missed a snowfall and hard freeze in Binghamton. The flip side was that it was very chilly right down here in the otherwise warm and sunny Ouachita Mountains. Our host, Betty Crump of the Forest Service, had generously led the Harps and Donnellys on a tour the preceding Thursday, showing us lovely ponds and heavenly streams. But the chilly gloom did not bode well for our weekend outing – even though we found an *Enallagma daeckii* (the first of five Montgomery county records) at a pond.

It never did warm up for the weekend gathering. A small crowd (Phoebe and George Harp, Ailsa and Nick Donnelly, John Abbott, and two beginning odonatists from Mississippi, Jason Bried and Laura Salmonsens) toured the roads and blew on their hands to keep their chilly fingers supple. Under such conditions the gorgeous streams were free of dragonflies, and most other insects. All the action was on sun traps along dirt roads.

One road in particular yielded most of the good finds for the trip. *Tachopteryx*, evidently breeding in a nearby spring-fed wooded swamp, were very common, landing on the road surface and scarfing down small butterflies. Two species of *Cordulegaster* (*obliqua* and an undescribed species being studied by Ken Tennessen) were found on grass stems along the road. *Gomphus externus* and

graslinellus toasted themselves on the warm gravel. *Anax junius* flew abundantly and were accompanied by a few *longipes*. *Libellula flavida* was found in the bushes in the sun. *Epiaeschna heros* patrolled relentlessly. But on the nearby Mazarn River only a lone *Basiaeschna janata* and a few *Tachopteryx* were seen.

The Caddo River is a major recreational stream and is supposed to have two species of *Neurocordulia*. Our evening visits (wearing warm jackets) turned up nothing, but earlier in the day, when the weather was merely cold, John Abbott and I stalked *Gomphus ozarkensis* on the gravelly shore. As usual the adults ignored us, but the children (in the manner of children everywhere) found our antics fascinating. Happily we did not embarrass ourselves too badly.

We also visited Caddo Pond, an artificial pond popular with local anglers, who hardly knew what to make of people with flimsy nets, and who seemed uninterested in the water itself, and who searched the grass and bushes, pouncing from time to time on *Gomphus oklahomensis* and *ozarkensis* and *Cordulegaster obliqua*. George found a *Nehalennia integrivittata* here – a state record. I found this pond of particular interest, because I was able to take good series of two very similar species that I find very difficult to tell apart: *Epitheca costalis* and *cynosura*. I had never seen them previously flying together at equal abundance. The two species exhibited a subtle micro-habitat difference, with *cynosura* preferring slightly sunnier bits of shoreline and flying in shorter patrols than *costalis*.

These wooded hills with spring-fed streams are among the loveliest places in the U.S. Who knows what might be found in warmer weather?

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DRAGONFLY DAYS [Lower Rio Grande Valley]

Joshua S. Rose

I returned yesterday from the third annual "Dragonfly Days" festival in the Lower Rio Grande Valley of Texas. Due to a last-minute cancellation by Jackie Sones, yours truly was this year's keynote speaker! It made for a bit more stress than usual, but I still had a wonderful time. The LRGV had been drought-stricken before we arrived, but a torrential thunderstorm hit late Friday night, improving things greatly.

There had been a few complaints last year about doing field trips in the afternoon heat, with talks in the morning, so this year the schedule was

rearranged. Bob Behrstock's "Dragonflies 101" talk - which gets better every year - started things off Friday evening, with an overview of the Anisoptera, the group's natural history and characteristics, contrasts with damselflies, coverage of each family, and relation of species groups to different habitats around the state of Texas.

The first field trip Saturday morning went to Anzalduas County Park. Despite cool, breezy weather, we had little trouble finding odonates, including a shocking number of Narrow-striped Forcepetail (*Aphylla protracta*), with a few Broad-striped (*Aphylla angustifolia*) thrown in. Highlight for the veteran oders was probably the Five-striped Leaf-tail (*Phyllogomphoides albrighti*); but since the differences between this species and the *Aphyllas* are on the subtle side, the less experienced folks were more excited about the 2-3 Caribbean Yellowfaces (*Neoerythromma cultellatum*). We also found one female Eastern Ringtail (*Erpetogomphus designatus*), and one Neotropical Bluet (*Enallagma novaehispaniae*), a Roseate Skimmer (*Orthemis* sp.), a couple of Needham's Skimmers (*Libellula needhami*), and several Black Setwings (*Dythemis nigrescens*), amid lots of Powdered Dancers (*Argia moesta*), Blue-ringed Dancers (*A. sedula*), Rambur's Forktails (*Ischnura ramburii*), Familiar Bluets (*Enallagma civile*), Red-tailed Pennants (*Brachymesia furcata*), and Eastern Pondhawks (*Erythemis simplicicollis*).

That afternoon, back at the Valley Nature Center, Sid Dunkle gave everyone an overview of the damselflies of North America, plus a few dazzling shots of some Latin American tropical families and species that don't quite reach the Texas border. Terry Fuller followed him with a pretty, comprehensive look at the damselflies of the LRGV, many of the photos taken in his own backyard! After a break and dinner, I gave the keynote talk, discussing exotic odonate species, native odonates being impacted by exotic species, and my own Ph.D. research; that talk went for nearly 90 minutes, but hopefully will be down to 15 for the odonate ecology and evolution session at NABS in just under 2 weeks!

In between talks, we explored the habitat behind the Nature Center, and encountered the weekend's only Desert Firetail (*Telebasis salva*) and Citrine Forktail (*Ischnura hastata*), as well as another Familiar Bluet and more Black Setwings and Roseate-type Skimmers. Somehow we never managed to net any of the Roseates to confirm which of the 3-4 species they were...

The following morning's field trip started with the Mercedes Tract of the LRGV NWR. Surprisingly few species repeated from the previous day, while

many were new for the weekend: Four-spotted Pennant (*Brachymesia gravida*), Great Pondhawk (*Erythemis vesiculosa*), Band-winged Dragonlet (*Erythrodiplax umbrata*), Black Saddlebags (*Tramea lacerata*), Eastern Amberwing (*Perithemis tenera*), and a lone female Thornbush Dasher (*Micrathyria hagenii*).

But the best was yet to come: we continued over to Santa Ana NWR, where we encountered a Turquoise-tipped Darner (*Aeshna psilus*)! This species had been recorded in the US only a few times, but this one very cooperatively hung in place to be photographed at very close range by pretty much everybody in the group! It'll probably be showing up on various people's websites any day now...

That afternoon's talk was cancelled, and the festival pretty much disbanded from there. Bill Haley (of the Tennessee Aquarium) and I decided to visit the La Sal del Rey tract of the LRGV NWR. The odes around the spring there were unspectacular, all things we'd already seen during the weekend: Roseate Skimmer, Needham's Skimmer, Rambur's Forktail, etc. That didn't stop us from having a great time, though, as I took very close-up photos of two as-yet unidentified species of Tiger Beetles (John Acorn, help!), and less close-up photos of a truly enormous green Tarantula Hawk that must have been 3+ inches long, a smaller related wasp subduing a wolf spider, a jumping spider that I think was *Phidippus audax*, and a Lesser Nighthawk nest of one egg and one hours-old chick (while the mother did her best broken-wing impression a few meters away). Before leaving, we drove the perimeter of the tract, and encountered a smallish (3-4 feet) Western Diamondback Rattlesnake, a Texas Horned Lizard, and two life birds for Bill, White-tailed Hawk and Long-billed Curlew!

Hope to see the same folks, plus many more, at next year's festival!

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DRAGONFLY DAYS [Roswell NM]

From an e-mail sent by **Karen Gaines**

In August 2001, the city of Roswell NM celebrated "Dragonfly Days". The events included: Guided tours led by refuge personnel and myself; A dragonfly tour (3 on Saturday, 3 on Sunday, each 3 hours long); An endangered Species tour (ditto) (There are several endangered fish in the saline ponds here.); a Bitter Lake Natural History tour (ditto); Birding trips led by local bird enthusiast; a bird banding demonstrations by bio-tech student Jacob Malcolm; a photography workshop, taught by

two local photographers; Slide shows and lectures by Robert Larsen and other folks on dragonflies and other natural attractions in the Roswell area (all about 1/2 hour long, and scattered between 9 am -- 5:00 pm on both days of the festival)

There were several information booths set up and run by USFWS personnel and other local groups, and several spots where folks could buy arts and crafts items and promotional items (caps, mugs, t-shirts) with the festival logo (designed by Brittany Burkfield, a fifth grade student who won the local competition to design the logo). Over 575 entries were submitted by local grade school children, and most of them were displayed on the walls of the room housing all of the information booths.

I'm still not sure how many people participated in all of the events together, but at least 40 people joined Gordon and myself for the three dragonfly tours on Sunday. We had a great time taking groups out to some of the public-access areas of the refuge, catching dragonflies and talking about their diversity and habitats. We were exhausted at the end of the last tour, but it was really fun.

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CUBA TRIP REPORT

Julie Craves, Rouge River Bird Observatory,
University of Michigan-Dearborn, Dearborn, MI
48128

I traveled to Cuba for ten days from 21 February to 2 March 2002. This was a U.S. Treasury-licensed trip for the purpose of surveying birds. Since birds were the primary focus, I did not get to chase after odes as much as I would have liked. However, armed with a home-made field guide to Cuban odes (compiled from Dennis Paulson's West Indies list and photos gleaned from various books and the Internet), I did manage to identify almost a dozen species.

I did not know what to expect as far as abundance was concerned. It is, of course, the dry season in Cuba. Further, Cuba is in the midst of battling an outbreak of dengue fever, a serious mosquito-borne virus. Workers have been pulled off other jobs to eliminate sources of standing water, and they are fumigating vigorously, especially in and around Havana. The good news is, I saw no use of pesticides; they fog with portable diesel engines that belch smoke. It has some effect on small flying objects, but the main purpose is to form a film over standing water to prevent the mosquito larvae from hatching. (An interesting side effect is that public transportation is affected due to a chronic shortage of diesel fuel, and in a nation

Entebbe airport about 36 hours after leaving New York (Cheap fares mean inconvenient connections.), where we were met by Ahmed, last year's cheerful and highly dependable driver. It is a tribute to our determination that, in spite of our exhaustion and antiquity, we went immediately to the field. Returning to the Mabira Forest near Kampala, we immediately spotted the beautiful *Umma* and *Chlorocypha* (beautiful green and red damselflies, respectively) that so delighted us last year. But this was the rainy season, and we found even more. Malcolm was delighted to net a lovely *Phyllomacromia aureozona*, a striking dragonfly which flies in small, clear forest streams, picking its way through vines and tangles. We found the brilliant green *Paragomphus viridior* sitting on concrete steps at a roadside spring, hardly moving out of the way when truck drivers came in a constant procession to fill their water cans. We also got very close views of red-tailed monkeys, which prowled the branches of trees right over our heads, making sounds like a feeding flock of birds. This set the tone for the remainder of the trip, which featured close views of several monkey species.

We repeated this visit a few weeks later with John Joseph Kisakye, who is doing a doctoral dissertation on the odonates of three areas in Uganda, including this forest remnant. I found *Chlorocnemis pauli* at a forest seep and managed to take several good pictures. *Notogomphus butoloensis* and *Paragomphus viridior* were ovipositing in the stream, but few were netted. A female of the very fat *Hadrothemis coacta* was ovipositing in a foul mud puddle in the path.

Our plan had been to leave Kampala, after two days recuperation from the flight, and drive to the southwestern corner of Uganda, where a mountain massif shared by Rwanda and the Congo has the world's largest population of mountain gorillas. Our first evening we stopped at a tented camp at Lake Mburo, which is one of the few places in Uganda where one can see zebras, impalas, and topies (another antelope type). The lake was a prime hippo place and teeming with fish eagles and a few crocodiles. It was here that we realized how fortunate we were to have a retired ornithologist with us. Fred Sibley showed us many bird species that we would have otherwise overlooked. After three weeks our list totaled well over two hundred species confirmed. We were especially delighted with the colorful songbirds, including weavers, sunbirds, and gonoleks.

The drive to Bwindi (home of the gorillas) was long and tiring, interrupted only for a few brief stops along the road where we found three of the so-called "*Enallagma*" species (*elongatum*, *subfurcatum*, and *pseudoelongatum*) that Mike

May is finally putting into genera of their own. At Bwindi we discovered that the "letter of recommendation" given to us by the Institute of The Environment and Natural Resources cut no ice with the local authorities. We could only wander around the park with a ranger and an armed guard at our side (they wanted no repetition of the 1998 incident when nearly a dozen tourists were killed by Rwanda bandits.) It is difficult to identify dragonflies this way, but we managed to find three species of *Chlorocnemis* (one of the prettiest protoneurid damselflies I have ever seen, with distinctively yellow-green tinged wings) along one path. One of these, *Chlorocnemis nigripes*, has a green and black striped thorax, a black abdomen with a thin blue dorsal line, and the terminal segments bright orange. We also found the tetrathemine dragonfly *Neodythemis fitzgeraldi*, which sits on vegetation and on the gravel path, and is quite fearless.

But Bwindi was our gorilla destination. The scheme is to make a booking months in advance, pray for good weather, and hike in a small group, which was just the five of us with two rangers armed with radios, four armed guards, and two trackers. The rangers spent most of their time on their radios conversing with who knows whom. We were "Mobile Strike Force Bravo". Towards the end of the hike, the ranger radioed in to report our imminent return. I distinctly heard the fragment, "... kind of old." As a bonus, our long hike was on a Sunday, and the tiny rural churches were crammed. Rural church services consist dominantly of spirited and very rhythmic group singing, accompanied only by a tireless drummer. The lovely sounds made our feet much lighter.

The aim was to visit a habituated gorilla band, which consists of a silverback, several other subsidiary males and females, and a few infants, which are nearly as big as you and me. These bands move only about a hundred meters a day, and they are visited every day (for one hour), which makes them easy to locate. Easy, except for the long hike. It was three hours each way, all of it up and down mountain paths, starting outside the park and passing through native villages and banana groves, and finally re-entering the park close to the gorillas themselves. Unlike chimps and orangutans, gorillas mainly eat leaves and bark. When we came upon our band, most of them were squatting in front of a huge rotten tree trunk, which they were happily devouring. We approached within about fifteen feet to watch them chow down. At one point one large male broke off a piece of rotten wood about the size of a few loaves of bread. They immediately had a fight over the luscious fragment, almost spilling into our laps.

Visitors are constantly cautioned about not approaching too close to the gorillas, and no flash pictures, please! The rangers are afraid that human visitors could pass on diseases, so if you have a sniffle, you stay home and get your fee refunded. Everyone knows that these are wild animals, and their future existence is possible only if truly wild habitat is preserved for them. But no one ever told the gorillas that. In fact, a splinter band visited the forest behind our tiny hotel the previous evening, and hung around for the four nights that we were there. The first evening one of the waiters mentioned that "They are here." Who are "they"? The gorillas, of course. So we drank our beer and watched them from about fifteen feet as they slowly munched vines just beyond the edge of the garden. The gorillas have found that the eucalyptus trees planted around the hotel are especially delicious, and they spend hours high up in these spindly trees stripping off long pieces of bark that they eat with great gusto. They tend to climb so high that the trunk breaks, thus explaining why all the eucalyptus appear to have been topped!

Leaving Biwindi, we traveled north to Jacana Lodge, in Queen Elizabeth National Park. We diverted briefly to look for tree-climbing lions (unsuccessfully), seeing more hippos, and skipping rocks across a very narrow river into the Congo. We traveled one of the worst roads in the country. Heavy trucks carrying cargo into the Congo use this road, and no one seems to be responsible for its repair. At one point we plunged into an especially deep pot hole and a vital piece fell off the van, which promptly stopped. Fred had fortunately stowed a roll of duct tape in his gear, and we were off again after a brief delay.

We stayed at Jacana for several days. One day we went to Kyambura Gorge to see chimpanzees. Malcolm and Fred crossed a treacherous tree over the wide river and got a very close look at the chimps, while Ailsa and I stayed on the far bank. This gave me a chance to spot an *Olpagastra lugubris*, a very thin-tailed riverine libellulid that was patrolling the river. At the top of the cliff, after we emerged from the gorge, we saw several the very large *Zygonyx regisalberti* patrolling in the sun.

We then discovered a new type of habitat – the village ponds from which clay is scooped to make bricks. (Brick making in primitive front-yard kilns seems to be a very widespread village industry in much of Uganda) At nearby Kyambura village the ponds were full of libellulids (several *Orthetrum*, blue and red *Trithemis*, the yellow-faced, gray *Chalcostephia flavifrons*, and the small, bright red *Aethriamanta rezia*) and damselflies (mostly two bright red *Ceriagrion* species). Watching us for

nearby shrubby trees were dozens of open-billed storks, which were feeding on the abundant large snails that also live here. Of course the villagers gathered and commented on the spectacle we provided.

Fred made an interesting observation while we were on a short boat trip in the Queen Elizabeth park. Looking for birds along the shoreline, we found a bushbuck, a mule-size antelope that usually is seen as a lone individual. Fred noted through his binoculars that several dozen *Brachythemis leucosticta* (The *Erythrodiplax umbrata* look-alike) seemed to be following the antelope as it ambled slowly through the grass. They stayed about two or three meters downwind of the animal and maintained their relative position as long as we watched. Whether they were feasting on other insects attracted to the bushbuck or were engaged in some other sort of behavior is not certain. Later we noticed that these dragonflies would cluster, a dozen at a time, about a meter or two from us as we ambled along the shorelines.

The Maramagambo Forest, in which the lodge is located, was a good, if not super, odonate place. We used a small boat to search for odonates on the Lake, finding the bright red *Pseudagrion massaicum* lurking in shadowy shallows along the shore. Fred and I managed to slip away from the hotel personnel, who in Uganda seem to be terrified that their guests might wander around in the forest without an armed guard. Fred had a chimpanzee encounter while poking around looking for small streams. Ailsa and I walked right into a troop of baboons while going back to the place where she had found a female *Heliaeschna cynthiae* the previous day. Colobus and red-tailed monkeys were seemingly everywhere, as curious about us as we were about them. I don't know whether we were following them or vice versa.

On our way back we stayed for a few days at Ndali lodge, perched on the rim of one of the many volcanic crater lakes in this part of Uganda. For those of you who are not geologists, the western rift of Africa is in an arrested early stage of continental rifting, which is featured by regional uplift and block faulting and is accompanied by abundant basaltic volcanism. (We were only a few miles from the recent destructive volcanic activity in the western Congo that you all saw on TV.) This rift zone is geologically very young and has oodles of endemic species of birds and everything else.

The surface of one of the crater lakes was covered by water lilies and lotuses, and Fred and I struggled to find a way to catch dragonflies without drowning. (The water depth is about ten feet just at the water's edge.) We were barely up to the

challenge (the word "pathetic" comes to mind) and found several libellulids new to us, including the small black libellulid *Acisoma trifida*, which has the middle third of the abdomen bright white. We also found "*Enallagma nigridorsum*".

Returning to Kampala, we spent the remainder of our trip visiting nearby places around Lake Victoria. Lake Nagugabo is becoming famous in the dragonfly world because of the visits of Viola Clausnitzer, among others. We found several libellulids new to us, including the bright red *Hadrothemis defecta*. The most interesting damselfly (to me, anyway) was the tiny *Agriocnemis victoria*, which could join a growing list of candidates for "smallest damselfly in the world". The tiny heterochromatic female is blood red!

Nearer to Kampala we visited the Zika Forest, which is the forested edge of a huge papyrus swamp. There are no streams as such, but at the swamp edge in the forest we found the unusual *Ceriagrion bidentatum*. Unlike its many congeners, which fly in bright sun in Africa and southern Asia, this bright red, long species lurks in the shadows and behaves like a *Palaemnema*. It was "fingers" time, and we found several of these elusive bugs.

The Entebbe Botanical Garden is not a botanical must-see, but it is attractive and has a long stretch of lake shoreline. *Paragomphus genei* perched within inches of the lake, and the peculiar *Crenigomphus renei* lurked in the unmowed grass behind the shore. There were dozens of *Phyllomacromia picta* flying over the grass, looking just like our libellulid *Brechmorhoga*. Patrolling *Othretrum trinacria*, a large libellulid, were catching and eating some of the huge numbers of *Brachythemis leucosticta*. A few large *Phyllomacromia nyanzana*, with a particularly vivid black and yellow color pattern, were also patrolling the garden.

Our trip was a great success, with 88 species of odonates in all. I was especially taken by the variety of damselflies. We haven't yet decided which will be the season for our next visit.

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CALIFORNIA ODES GROUP

e-mail from **Kathy Biggs**

There's a new group in CA called "CalOdes". It is a 'Yahoo! Group'

<<http://groups.yahoo.com/group/CalOdes/>>

associated with my CA Dragonflies Web site <<http://www.sonic.net/dragonfly/>> and started by

Doug Aguiard. We have about 30 members so far and it is serving well to not only help us in obtaining new distribution but also new flight season data.

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GOMPHUS SEPTIMA REDISCOVERED IN ALABAMA

Steve Krotzer

On May 5, 2002, while photographing rare plants at a Nature Conservancy preserve on the Little Cahaba River in Bibb County, Alabama, Mary Jane and I encountered a female gomphid that did not "fit" any of the species I would have expected to see there. After taking photographs of this individual, I was able to capture her for closer examination (not an easy trick with only a small pocket net). Much to my surprise it appeared that we had stumbled across *Gomphus septima*!! As many of you know, this rare species was described from specimens collected in Alabama between 1937 and 1940. The type locality was subsequently impounded, and the species has not been seen in the state again.

After gaining permission from Nature Conservancy personnel (thanks, Chris!!) to collect additional specimens at the site, I made daily trips there for the next several days. Although the flight season was apparently winding down, I was able to collect several males and females and confirm that this was indeed *Gomphus septima*. All individuals were old, with very dull thoracic markings and slightly tinted, tattered wings. All males were collected at or very near the water, while most of the females were seen on dirt roads or in natural openings away from the stream. The greatest activity took place, not surprisingly, in mid-morning and again late in the afternoon. By May 9, no more individuals were seen. On May 11, however, one female was collected and several males seen at a more extensive shoal area on the Little Cahaba, approximately 2 miles downstream from the Nature Conservancy locality.

The rediscovery of *Gomphus septima* in Alabama is significant for several reasons. First, of course, is the fact that it re-establishes the existence of the species in the state after a period of 62 years. The overall presently known range can now be extended well south of North Carolina. Since this site is protected by the Nature Conservancy, and the watershed overall is very stable, the species should be under no threats here for the foreseeable future. And the best part of all is that now I only have to travel 25 minutes, instead of 8 to 9 hours, to see, photograph, and monitor this fascinating insect!

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ORTHEMIS DISCOLOR FROM ARIZONA.

Andrew Rehn and Dennis Paulson

The distribution of the sibling species *Orthemis discolor* (Burmeister) and *O. ferruginea* (Fabricius) in Central America was discussed by Donnelly (1995) and Paulson (1998a). The only two published records of *O. discolor* in the U.S. are from Texas; one from Gonzalez Co. (Dunkle 1998) and one from Fayette Co. (Paulson 1998b). While curating unidentified Odonata in the University of California Bohart Museum of Entomology, Andrew Rehn identified two male *Orthemis* from Arizona as *O. discolor*. The identification was verified by Dennis Paulson and Nick Donnelly. The specimens were collected at Sycamore Creek, Maricopa Co., Arizona, 22 Aug. 1977 (collector unknown). Two female *O. ferruginea* in the UCD collection share the same collection information, an interesting case of sympatry. This record represents a significant extension in the known range of *O. discolor* (although peripheral populations may be local and ephemeral), and suggests that collections of *Orthemis* from northern Mexico and the bordering regions of the U.S. may contain additional specimens of the species.

While comparing the two AZ specimens with Mexican *O. discolor* in his collection, Dennis Paulson noticed that the faces of the preserved AZ males are red as in life, whereas the faces of other preserved *O. discolor* become purplish and metallic after drying whether acetoned or not, and thus look like *O. ferruginea*. In addition, the basal wing veins of the AZ males are orange as in typical *O. ferruginea*, but basal wing veins in typical male *O. discolor* from western Mexico and other Central American localities are black. Potential explanations of the unusual wing coloration in the AZ males are purely speculative, but may involve a pale desert morph.

Literature Cited:

Donnelly, T.W. 1995. *Orthemis ferruginea*- an adventure in Caribbean biogeography. *ARGIA* 7(4):9-12.

Dunkle, S.W. 1998. Another *Orthemis discolor* record from Texas. *ARGIA* 10(1):7-8.

Paulson, D.R. 1998a. The distribution and relative abundance of the sibling species *Orthemis ferruginea* (Fabricius, 1775) and *O. discolor* (Burmeister, 1839) in North and Middle America (Anisoptera: Libellulidae). *Intl. J. Odon.* 1(1):89-93.

Paulson, D.R. 1998b. *Orthemis discolor* (Orange-bellied Skimmer), a new species for the U.S. *ARGIA* 10(1):7.

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RECENT HIGHLIGHTS IN OREGON

Jim Johnson, Eric Coombs, and Steve Valley

This note is a report of significant new Oregon findings from the 1999, 2000, and 2001 seasons. With the additions reported here the total number of odonate species known to occur in Oregon is now 88 (61 anisoptera and 27 zygoptera).

New Oregon Species; ZYGOPTERA

Lestes stultus: Two males collected at a small, dry roadside cattail marsh about 4.5 mi. northeast of Drain, Douglas Co. (360 ft. elev.), on 21 July 2000, by Jim Johnson. This location is at least 120 miles north of the previous northernmost records in Del Norte Co., California. Following this find, a number of *Lestes* were collected at Fanno Meadows in southwestern Polk Co. (2850 ft. elev.) on 17 September 2000, which initially appeared to be *L. stultus* based on their dark (non-green) coloration. This second find seemed to be another extension of the known range of *L. stultus* by about 80 miles, however immediately after desiccation in acetone, the specimens turned metallic-green and could not be differentiated from *L. dryas*.

The view that *L. stultus* should be considered a subspecies of *L. dryas* is shared by several leading odonatologists, largely because of a lack of morphological differences. It seems likely that these species will be synonymized in the near future.

Nehalennia irene: Sixteen males and 13 females collected at Gold Lake Bog, Lane Co. (4800 ft. elev.), on 10 August 2001, by Jim Johnson and Eric Coombs, and two males collected the same day at a sedge marsh alongside Crescent Creek, Klamath Co., near Hwy 58 (4630 ft. elev.), by Eric Coombs. This species was expected to be found in Oregon since it occurs to the north in the Cascades of Washington, and to the south in the Sierra Nevada of California.

ANISOPTERA

Aeshna subarctica: Four males and one female collected at Little Crater Lake meadows, Clackamas Co. (3230 ft. elev.), on 3 September 1999, by Jim Johnson, Steve Valley, and Eric Coombs. The female was collected while it was perching in dense sedges, so it may have been ovipositing. This was the most interesting

discovery of the last few years since this boreal species was unknown in the neighboring state of Washington until just one week prior to our discovery – and that was in the far northeastern corner of the state, about as far from Oregon as you can get!

The only other time that *A. subarctica* has been found since the initial discovery, was at the same location over a year later on 7 October 2000 when five males were collected by Jim Johnson. Drought conditions in 2001 left Little Crater Lake meadows virtually dry for that season, and very few odonates (and no *A. subarctica*) were found.

The apparent sporadic occurrence of *A. subarctica* at Little Crater Lake meadows suggests that the species may not regularly breed there, but rather visits from another location in the area.

***Aeshna sitchensis*:** Several (5-10) captured and released at the north end of Sparks Lake (5430 ft. elev.), Deschutes Co., on 13 September 1999, by John Davis and Jeff Dillon. Two males collected by Joe Engler at Little Crater Lake Meadows, Clackamas Co. (3230 ft. elev.), on 17 September 1999. Several (3-5) captured and released, one female collected at Strider Lake (5010 ft. elev.), about 1.5 miles west of Little Cultus Lake, Deschutes Co., on 26 July 2000, by John Davis and Jeff Dillon.

Despite numerous visits, this species has not been found at Little Crater Lake Meadows since the original find at that location. As with *A. subarctica*, *A. sitchensis* may not regularly breed there, but visits from another location.

***Paltothemis lineatipes*:** One male collected on 25 August 2001, and one male and one ovipositing female collected on the following day, 26 August, at Cottonwood Creek (4300 ft. elev.), Harney Co., about 8 miles SSE of the town of Fields, by Jim Johnson and Steve Valley. One or two additional males were observed. Most sightings were of males patrolling about a foot or two above the stream. This location is in a very arid and hot (during summer) area of the state, averaging only 8-10 inches of rain annually, with upland vegetation being mostly sagebrush and greasewood. Cottonwood Creek is a small, permanent stream with riparian vegetation composed of scattered cottonwood trees and a thick, shrubby understory over much of its length. The *Paltothemis*, however, were only found along the relatively barren lower one hundred yards or so of the creek, before it flows under Hwy 205.

Finding this species in Oregon was quite a surprise as the northwest extent of its range seemed to be

restricted to the Central Valley of California, and it was never imagined that it could be in Oregon. This find suggests that this species is likely to occur in Nevada as well, where *P. lineatipes* has thus far not been recorded. Cottonwood Creek is only about 12 miles north of the Nevada border.

The most interesting aspect of this find was the apparently narrow window of activity during our two days of observation. On each day we only saw *P. lineatipes* for about an hour, from about 11:00 a.m. to noon, despite intensive searching along the creek and in the adjacent sagebrush and greasewood. This may explain why this species was not found earlier on this stream which has been visited on numerous occasions.

Other Interesting Records; ANISOPTERA

***Aeshna walkeri*:** One male collected as it fed over small willows along the eastern shore of the John Day River at the Cottonwood Recreation Site (590 ft. elev.), Gilliam Co., on 29 August 1999, by Jim Johnson. The previous northernmost known location for *A. walkeri* was in south-central Oregon in Lake Co. (D.R. Paulson, pers. comm.), about 150 miles from the Gilliam Co. site, although the former has not produced any records in recent years (Eric Coombs, pers. comm.). Cottonwood Recreation Site lies in a deep canyon with sagebrush-dominated slopes, roughly 35 river miles from the John Day's confluence with the Columbia River. No other *Aeshna* were observed at this time.

One female collected along the southern shore of the Columbia River near Rufus, Sherman co., about six miles west of the mouth of John Day River, on 18 September 1999, by Jim Johnson. This individual was collected as it perched on the lower branches of a large tree.

These two records suggest that *A. walkeri* is more widespread, though perhaps local, east of the Cascades in Oregon where, in general, exploration has been lacking during the fall. Also, they indicate that the species likely occurs in south-central Washington, at least occasionally as wanderers, if not as breeders, and it is probably just a matter of time before it is recorded in that state. What still needs to be determined is where *A. walkeri* are breeding in north-central Oregon, or anywhere in Oregon for that matter since the Lake Co. site does not appear to support the species any longer.

***Somatochlora minor*:** Two males collected along Crescent Creek near Hwy 58 (4630 ft. elev.), Klamath Co., on 28 June 2000, and two more males collected at the same location on 26 July 2000, by Eric Coombs. Previously, this species was known in Oregon only from two locations in Deschutes

Co.: Todd Lake and near Little Cultus Lake (S. Valley, pers. comm.).

***Somatochlora semicircularis*:** Three males collected at Gearhart Bog, Clatsop Co., on 19 August 2001, by Jim Johnson. *S. semicircularis* is known to occur at higher elevations throughout Oregon above about 2800 ft., but this record is notable for its low elevation which is very close to sea level. Isolated individuals have been collected at low elevation sites in Oregon in the past, but they are believed to be wanderers. This was the first time that multiple individuals have been observed at what is presumed to be a low-elevation breeding site. Although no direct evidence of reproduction was observed at Gearhart Bog, the presence of multiple individuals and appropriate habitat makes it likely.

***Somatochlora walshii*:** Two males collected at a sedge marsh alongside Crescent Creek (4630 ft. elev.), Klamath Co., on 10 August 2001, by Eric Coombs and Jim Johnson. The known range of this species in Oregon was previously restricted to Little Crater Lake Meadows, Clackamas Co., about 120 miles to the north, where it was first found in 1998 (Johnson 1998).

***Libellula comanche*:** One female collected at Lower Borax Reservoir, just below Borax Lake (4070 ft. elev.), Harney Co., on 1 July 2000, by Jim Johnson. Many males and females collected at Borax Lake, and several more at Twin Springs (4545 ft. elev.), Harney Co., on 29 June 2001, by Steve Valley, Eric Coombs, and Jim Johnson. Breeding activity including copulation and ovipositing were frequently observed on the latter date. Prior to 2000 in Oregon, this species was only reported by Kormondy (1960) and Paulson (1992), however the latter report was determined to be incorrect (D.R. Paulson, pers. comm.).

Literature Cited:

Johnson, J. 1998. *Somatochlora walshii* Recorded in Oregon. **ARGIA** 10(4):25.

Kormondy, E.J. 1960. New North American Records of Anisopterous Odonata. *Ent. News* 71:121-130.

Paulson, D.R. 1992. Noteworthy Northwestern Odonata Records for 1992. **ARGIA** 4(3):8-9.

A NEW DRAGONFLY FOR UTAH

John C. Abbott

Recently, Riley Nelson (Brigham Young University) sent me a shipment of dragonflies he and his students had collected in southern Utah. In addition to a number of expected species for the area there were three male and 1 female *Aeshna persephone* Donnelly (Persephone's Darner) in the lot. All were collected in the Grand Staircase Escalante National Monument (Kane Co.) between September 30, 1999 and August 8, 2000. To my knowledge this is the first report for this species in Utah. Needham et al. (2000) report it from Arizona, Colorado, New Mexico and Chihuahua, Mexico.

Literature Cited:

Needham, J.G., M.J. Westfall, Jr. and M.L. May. 2000. *Dragonflies of North America*. Scientific Publishers, Gainesville, FL: 939 pp.

DOT MAP PROJECT - PATTERNS OF DIVERSITY ARE EMERGING

Nick Donnelly

I am going to call a halt after this summer to the data gathering phase of the dot-map project. I now have nearly 109,000 species / county records. The rate at which new data is arriving has slowed considerably, but in the last few months I have received several additional parcels of information.

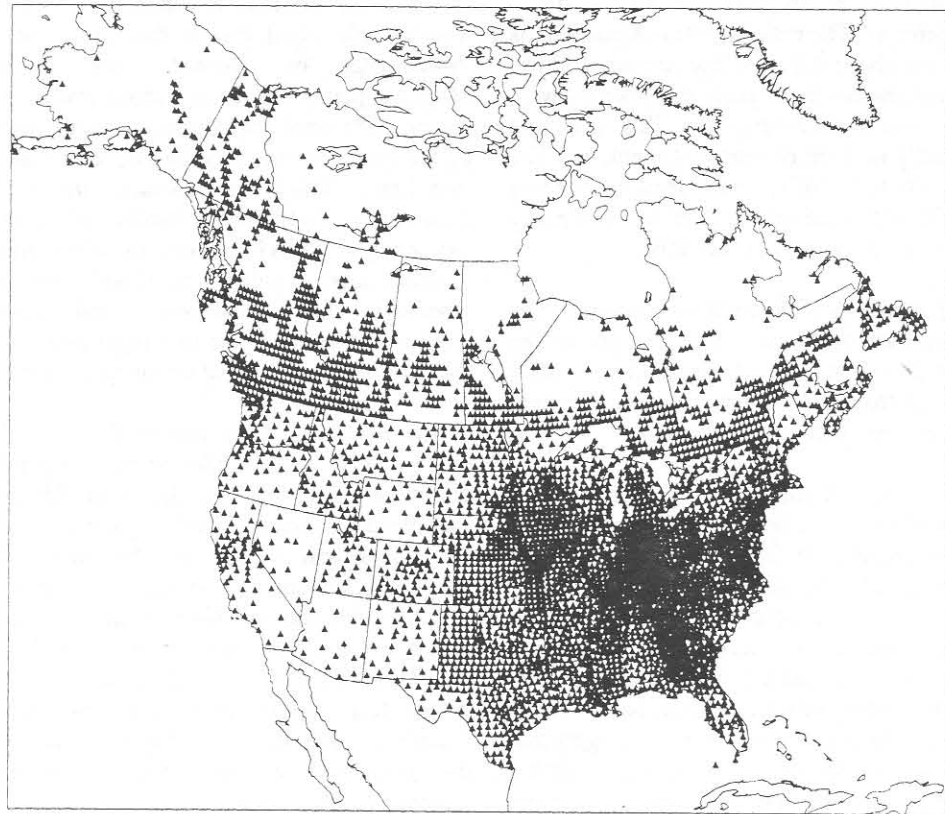
I have distributed state lists to many people, and have distributed complete data sets to Dennis Paulson, Sid Dunkle, and John Abbott. I am more than happy to distribute state lists to anyone who e-mails me requesting the information. The more information I can disseminate the better.

I have been exploring with John the possibility of making an interactive web site, from which you could obtain dot-maps that are upgraded automatically with the arrival of new data, rather than scanning maps all over again. So far we have not figured how to do that. If anyone out there has some hints, we would be happy to hear them.

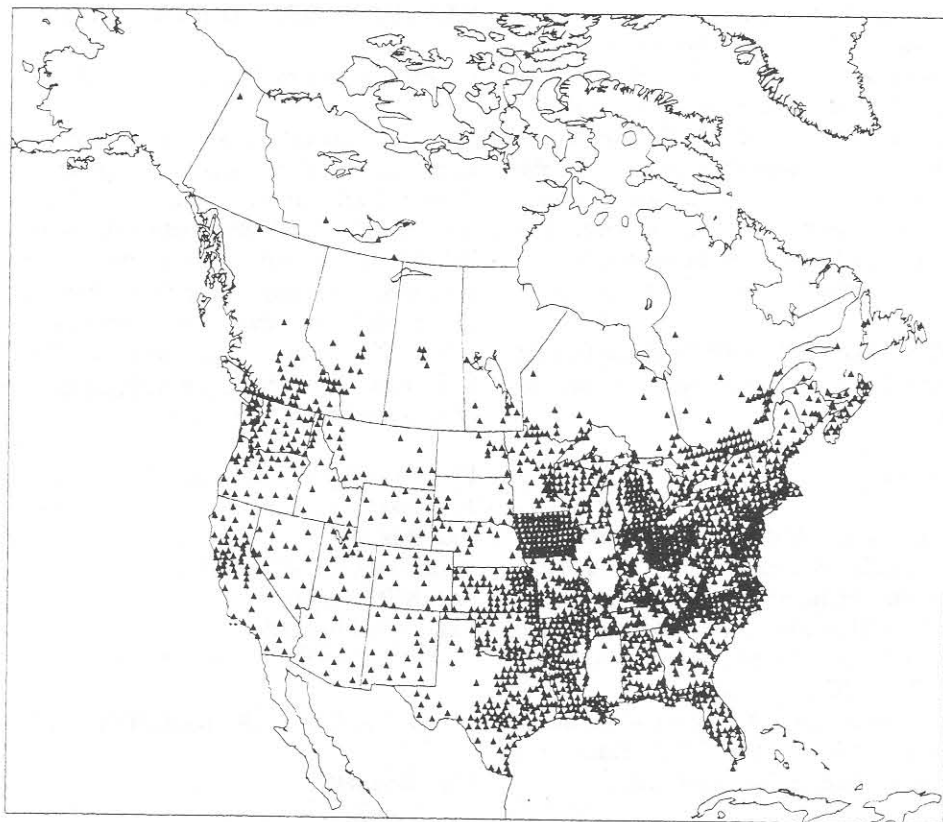
I have decided to make 1 October 2002 the cut-off date for the project. The maps will be printed after that. It goes without saying that making new maps to show additional data will be both difficult and expensive (unless we can devise that interactive scheme on the web).

Some states are poorly covered, and perhaps this season some of the holes can be filled in. Alaska stands out as having extremely thin coverage. Other states that seem to stand out as deficient (low average records per county) are: Mississippi, South

state/ province	species	records	records per county or 30' cell	counties lacking data
Alabama	174	2534	36.7	
Alaska	26	154	2.9	
Alberta	68	1129	7.7	
Arizona	116	595	39.7	
Arkansas	131	2339	29.6	
British Columbia	88	4067	11.8	
California	111	2337	40.3	
Colorado	104	957	16.5	5
Connecticut	147	816	102.0	
Delaware	109	222	74.0	
Florida	166	3124	45.3	
Georgia	166	1872	13.2	18
Idaho	72	622	15.6	4
Illinois	139	1621	16.9	6
Indiana	145	2438	27.7	4
Iowa	107	4093	41.3	
Kansas	125	2617	24.9	
Kentucky	148	2848	25.2	7
Louisiana	123	2110	33.0	
Maine	158	1568	98.0	
Manitoba	91	608	8.0	
Maryland & DC	163	1362	56.8	
Massachusetts	168	1276	91.1	
Michigan	164	4235	50.4	
Minnesota	131	1654	19.7	3
Mississippi	114	493	9.7	30
Missouri	140	2803	24.6	
Montana	82	843	15.9	4
Nebraska	97	842	14.0	33
Nevada	83	513	30.2	
New Brunswick	125	842	56.1	
New Hampshire	147	777	77.7	
New Jersey	180	1563	74.4	
New Mexico	130	1094	32.2	
New York	190	3096	52.5	
Newfoundland & Labrador	40	408	7.8	
North Carolina	182	7184	71.1	
North Dakota	56	642	12.3	1
Northwest Territory	33	188	5.7	
Nova Scotia	117	1048	58.2	
Ohio	159	4724	53.7	
Oklahoma	139	2199	28.9	1
Ontario, northern	141	2333	13.3	
Ontario, southern	157	2411	63.4	
Oregon	90	1239	34.4	
Pennsylvania	170	3392	50.6	
Prince Edward I	57	108	36.0	
Quebec	139	3209	17.2	
Rhode Island	130	393	78.6	
Saskatchewan	60	399	5.3	
South Carolina	150	1292	28.1	
South Dakota	80	552	12.3	21
Tennessee	151	1896	20.8	4
Texas	210	5440	25.2	38
Utah	85	657	22.7	
Vermont	133	328	23.4	
Virginia	185	2384	23.8	
Washington	78	1322	33.9	
West Virginia	127	1179	21.8	1
Wisconsin	160	2496	34.7	
Wyoming	70	590	24.6	
Yukon	32	518	6.0	



all counties and cells



counties and cells with 20 or more species

Carolina, Minnesota (especially Zygoptera!), and Vermont. Georgia has a low record per county average and many counties without data, but this state has zillions of tiny counties, so the figure alone is deceptive. The entire northern Great Plains is the most poorly inventoried eco-region of North America, with the southern parts of Saskatchewan, Manitoba, eastern Montana, the Dakotas, and Nebraska badly in need of more information. The table shows the status of records for each state and province. The information in this table will already be out of date by the time you read this!

An interesting pattern of diversity is emerging. The most diverse part of North America (species per county) is next to the eastern megapolis (northern New Jersey to eastern Massachusetts, with several counties having more than 120 species.

There are a significant number of counties in which the large number of records indicates activity by one or more individuals for long periods of time. These counties are the home bases of the older Odonatists. In these counties the large tallies include many species that have been found only once or a few times during a long time period, rather than indicating that the resident population is more diverse than adjacent counties. I suggest that no more than about 80 percent of the species on the lists for these especially speciose counties are truly resident.

There is also a good correlation between diversity and average rainfall, with the wetter eastern North American counties having much longer lists than the drier western ones, and with higher numbers again along the more humid Pacific coast. In contrast to several other aquatic insect groups, the Rocky Mountains, Sierra Nevada, and Cascade ranges in the west are not strikingly diverse, with vastly shorter county lists than in the Appalachians.

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DRAGONFLY “FOOTPRINTS” - A short note about a recent paper from the *Journal of Paleontology*

Roy Beckemeyer

Simon Braddy and Derek Briggs of the University of Bristol, England, write in an article titled “New Lower Permian Nonmarine Arthropod Trace Fossils from New Mexico and South Africa”, in the latest issue of the *Journal of Paleontology* (76(3):546-557, 2002), of what may be the impression left by an ancient dragonfly-like insect in what was likely a tidal flat along the palaeocoastline of Permian North America.

A series of “ichnofossils”, or trace fossils that represent tracks and body imprints left by insects that walked or perched on these flats have been found in the Robledo Mountains of New Mexico. The specific fossil that is thought to be either a Protodonata or Odonata (or possibly a Megasecoptera) has been named *Rotterodichnium major*. The trace includes portions of impressions of the head, thorax, legs, and abdomen and is 124 mm long. Tracks of dinosaurs are not all that uncommon, but trace fossils of insects are extremely rare, and this one provides information of much interest: indications of body size (bodies of insects are rarely preserved – most insect fossils from the Palaeozoic are of wings) and a record of the insect having perched on the soft substrate.

Whenever I see a dragonfly that has failed to emerge floating dead in the water of a pond, I think about the fossils of 265 million year old dragonflies that are occasionally found in parts of Kansas and Oklahoma, and wonder whether this unfortunate insect might eventually be preserved for millions of years into the future. Now when I see a gomphid perched on the silt alongside a stream, I will think about the delicate impression left a quarter of a billion years ago by *Rotterodichnium major*, a brief instant in time preserved for us to see today, an almost unimaginable span of time later. Fossilized ephemera – utterly amazing!

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KENTUCKY DRAGONFLY POSTER

Information sent by **Ellis Laudermilk**

The East Kentucky Power Cooperative (EKPC) has made an excellent dragonfly poster available, joining those from Ohio, New Mexico, and Arkansas. EKPC is distributing the posters free to individuals that request one or two, and should be commended for paying the production costs of the poster and for their environmental education program in general. You can contact the EKPC at their main office: <http://www.ekpc.com/index.html> or at the address/phone below.

East Kentucky Power Cooperative
4775 Lexington Road
P.O. Box 707
Winchester, Ky. 40392-0707
Tel. (859) 744-4812
Fax. (859) 744-6008

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SOME NAMES FOR “DRAGONFLY”

Nick Donnelly

One of the fascinating aspects of foreign dragonfly collecting is discovering the names that local people have for dragonflies. I have reported over the years on names from Andhra Pradesh, Karnataka, Fiji, Solomon Islands (four languages), Borneo, Vietnam, and other places that I have already forgotten. Interestingly, I have found that in the country, people almost always use the same name for both dragonflies and damselflies.

In my article about Burma last year I neglected give the Burmese name for dragonfly. It is "pazin", with accent on the second syllable. I was unable to find a simply translation for this word. I used it extensively, and people always understood what I meant.

In Uganda this year we found several names. In the southwestern corner the locals called them "Omusundabatwa" or "Emyambi ya Abatwa". "Abatwa" means "pygmy" and "Emyambi" means "arrow". I am not certain which of the several local languages this was.

In central Uganda, the Buganda speak Luganda (Sounds like a tango, doesn't it?). Here the accepted term is "Namunkanga", which means "helicopter". I tried it several times and it was always understood.

DRAGONFLY PUBLICITY IN NEWSPAPERS

Kathy Gibbs says: "Dragonflies are getting a lot of good publicity here in California". (see **TRAMEA** also) There was an article last month in Kern Co. about the Giant Darners found there and another article in the National Wildlife Magazine on Natural Gardening - Attracting Aerial Acrobats to Your Yard - 14-15, April/May 2002 - (with color photo) By Cynthia Berger. It mentions several DSA members.

Mark O'Brien contributed this note: Readers of the Ann Arbor News recently (2 May) opened their paper to see one of the largest (and prettiest) color photos of *Hetaerina americana* that I have ever seen. The photo leads an article announcing a photography workshop by Mark on 7 and again 14 May. Sorry - you missed it!

BEGINNER'S GUIDE TO DRAGONFLIES, by Blair Nikula and Jackie Sones. Stokes Beginner's Guides, Little Brown, and Co., 159 pp., \$8.95.

Reviewed by **Nick Donnelly**

At last! A field guide that will really fit into a pocket! And a magnificent field guide at that!

Blair Nikula and Jackie Sones have described more than 100 North American dragonflies, with short comments about many additional species. The authors presume that users of this book will be identifying dragonflies and damselflies by sight alone, and they freely admit that many species will be unidentifiable unless examined in the hand. They provide the prettiest, and best presented, color photographs that I have seen in a guide of this sort, including many of females. For several genera (*Enallagma*, *Aeshna*, *Gomphus*, etc.) that give major problems to beginners, they provide boxes with comments on the criteria used for identifying species within these genera, although they do not actually show to accomplish the identifications. An introductory section discusses the life cycle from egg to larva to adult, and describes their life style and habits. The best summary adjective for this book will be "useful". It should be in the hands of every beginner, and at its very low price, it would be a useful to have on hand to simply give to someone who has expressed some interest in these insects. So don't buy just one - buy several; you'll be glad you did.

NATURE'S FLYERS: BIRDS, INSECTS, AND THE BIOMECHANICS OF FLIGHT, D.E. Alexander, 2002, The Johns Hopkins University Press, Baltimore.

Reviewed by **Roy Beckemeyer**.

Dave Alexander, a professor in the Department of Entomology at the University of Kansas, has been deeply involved in natural flight since he did his thesis work on wind tunnel studies of turning flight by dragonflies back in the mid 1980's (See J. Exp. Biol., 1986, 122:81-98). His book is an excellent introduction, non-mathematical in treatment, for the interested non-specialist. The book covers not only the traditional aerodynamics material on how gliding and flapping wings work, but goes on to such subjects as "Staying on Course and Changing Direction" (Chapter 5 on stability and maneuvering), "Fueling Flight" (Chapter 6 on flight metabolism), and "Finding the Way" (Chapter 9, on navigation).

Although I may be a little prejudiced, I suppose, since Dave is a friend, and I reviewed a number of chapters of this book prior to its publication, I will nevertheless recommend this as an eminently readable and understandable introduction to what can be an esoteric subject. If watching the remarkable flying antics of dragonflies has fascinated you, you will find this treatise on the mechanics of flight in nature a pleasant and instructive read.

SPERM COMPETITION AND ITS EVOLUTIONARY CONSEQUENCES IN THE INSECTS. 2001. Leigh W. Simmons. Princeton University Press, Princeton, NJ.

Reviewed by **Roy Beckemeyer**.

Thirty years after the seminal (sorry, I couldn't resist.) paper of the same title by Geoff Parker (Biol. Rev., 1970, 45:525-567), L.W. Simmons has taken on a synthesis and review of what is an extremely rapidly growing area of evolutionary and behavioral biological research. The book will be of interest to odonatologists, as Odonata are one of the model groups of insects that exhibit the consequences of a reproductive biology in which sperm competition is a fundamental factor.

Most previous books in this subject area have been either collections of papers given at conferences or groups of chapters by different authors assembled by volume editors. These include: R.L. Smith (Editor), 1984, *Sperm competition and the evolution of animal mating systems*, Academic Press, London; J. C. Choe & B.J. Crespi (Editors), 1997, *The evolution of mating systems in insects and arachnids*, Cambridge University Press, Cambridge; and T.R. Birkhead & A.P. Moller (Editors), 1998, Academic Press, London. Simmons' book is comparable to that of Birkhead and Moller's *Sperm competition in birds: evolutionary causes and consequences* (1992, Academic Press, London), which had presented a synthesis and review of the literature on avian sperm competition.

This book includes an extensive bibliography that includes nearly 1300 references, many as recent as 2000, and will serve as an excellent follow-on to Parker's original paper for anyone interested in getting started in studying this fascinating topic.

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Book Notice: **SUOMEN SUDENKORENNOT** (The Dragonflies of Finland), by Sami Karjalainen

Taken from an e-mail from author

[publisher not given]; ISBN 951-31-2212-3; Size: 21 x 26 cm; 222 pages, hard cover; 228 color photographs (almost 80 of those full page size); price about 50 euros.

The book covers all the 52 species of dragonfly recorded in Finland (including *Aeshna crenata*, *A. osiliensis*, *Somatochlora sahlbergi*, *Ophiogomphus cecilia*, *Coenagrion johanssoni*).

The book is written in Finnish but has brief instructions in English. Non-Finnish readers should be able to extract valuable information from the distribution maps and other graphic presentations, and will, of course, also be able to enjoy the photographs, almost all of which are of live specimens in their natural settings.

For more information or photo samples, please visit <http://dragonflies.korento.net/>

The book can be ordered from Academic Bookstore: <http://iki.fi/sudenkorennot/book.html>

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TRAMEA

Michael Bluth introduces a new Vermont website:
<http://campus.greenmtn.edu/dept/NS/Dragonfly/index.htm>

Marcel Wasscher sends three items: The Dragonflies of the Eastern Mediterranean:
<http://www.libellen.org/epallage>

An Asiatic site on Asia Web: <http://www.asia-dragonfly.net/>
This has a photo database of East Asiatic dragonflies by Eric Gibert (ericgibert@yahoo.fr)

The Siberian dragonflies of the Novosibirsk museum: <http://www.bionet.nsc.ru/szmn/Insecta/Odonata.htm>

Karen Gaines tells us that Roswell NM will have a "dragonfly days" again this year. The new (child-designed) logo isn't online yet, but here's the URL for the festival's website. It's pretty skimpy now, but will be filled out when more information becomes available.
<http://www.rt66.com/~kjherman/fbl/df.html>

Kathy Gibbs has sent some interesting articles about dragonflies in California papers:
Oakland: <http://www.oaklandtribune.com/framework/0%2C1413%2C82~1804~601205%2C00.html>
Redding: <http://www.redding.com/columnist/bdeuel/stories/20020512colbd084.shtml> and
<http://www.redding.com/outdoors/stories/20020512ou087.shtml>

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