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ARGIA

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THE DRAGONFLY SOCIETY OF THE AMERICAS

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JOURNALS PUBLISHED BY THE SOCIETY

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 Windows 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, or as e-mail attachment, as above, with illustrations in final form and preferably adjusted to final size.

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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 Lane, 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.

Front cover: DSA meeting in Decorah, Iowa. You can hardly tell that it is raining! Photo by Greg Lasley

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

In This Issue

This has been a strange season. The Northeast has been cold and wet like no summer for many decades (where is global warming when you need it?). But much of the west is dry! Recently we visited western South Dakota, which was tinder dry and ready to go up in flames. Yet in the eastern part of the same state the rains had left puddles in all the low spots and the crops were lush!

Many of us met for the annual meeting in Decorah, Iowa. What is still unkindly referred to as the "Donnelly Effect" (can we now call this for someone else?) threatened to drown us all. Seven inches of rain does get your attention, even if you are not looking for dragonflies. However, we had shrewdly planned a year before to devote a portion of this meeting to formal presentations, and we were able to feast on lovely images of dragonflies accompanied by witty discourse while the rain drummed on the roof of our auditorium. The town of Decorah was probably the loveliest venue we have experienced in our 15 meetings, and we all departed on Monday with a sense of attachment to Iowa, its lovely towns, and outgoing citizens. Luther College was an inspired gathering place, and our hosts, Steve and Marcia Hummel, really knocked themselves out to make the meeting a success. They set a very high standard for future meetings. Our hearty thanks to both of them!

Ann Johnson reports on the post-meeting trip to southern Iowa. They saw a state-record ***Libellula vibrans***, one of many new records reported this season. Ailsa and I had been there the previous week (in the rain, natch!) and were very taken with this part of the state.

Harking back to the early Spring, a group of us met in northwest Florida for our now-annual Eglin trip. The bugs were only so-so this year, but the fellowship was outstanding and the rain was not constant. Ailsa, I, and Jerrell continued on to eastern Louisiana to look for ***Ophiogomphus australis***, which Gayle Strickland had found a week or so earlier. We met cold weather, and spent a night in Bogalusa, which may be the least pleasant town in the entire US. Ken Tennessen reports separately on the only significant record from the Eglin trip: ***Hetaerina americana***, which is even scarcer in Florida than New England (see below).

A beautiful April day dawned on America's largest-ever ode conference -- the Athol, Massachusetts gathering. The attendance was around 130 persons, (well over a dozen traveling a considerable distance to attend) which makes this the largest ode meeting ever held in North America (the previous international conferences in 1977, 1978, 1989, and 1999 topped out at about 100 max.). Anyone there had to realize that our bugs have truly come of age. No one even wanted to step out into the sun with their net (O.K., so it was a day or so before the first ***Anax junius*** arrived.).

The southeastern DSA trip to Kentucky was very successful, in spite of some rain. This meeting served as a run-through for a future national DSA meeting. The northeastern DSA meeting in Vermont also encountered rain, but the group was able to snag a large number of county records.

The Great Lakes meeting in Cleveland was apparently the only really dry trip of the year. The bugs were superb, and a great time was had by all.

We still have two meetings scheduled this year, a September colloquium in Ottawa and an October meeting in Nova Scotia. You can leave your net home for the latter, and probably the former. But meetings this year have been outstanding.

The national meeting next year will be held in late June (exact date not yet established – stay tuned) on the Ottawa River upstream from Ottawa. This promises to be a rich area, and the membership will get to meet an especially vigorous group of Ontario odonatists.

The subtext of our feature article (Bob Behrstock on ***Argia carlcooki***) is that establishing a record can be an agonizing experience. The southwestern ***Argia*** are famous, with two dozen species peculiar to this region, and several of these being newly described, or newly found in the US. Bob tells us why he considers this photographic record convincing for this newly described species. If only it could be confirmed!

We continue with our articles on Cuba, with an article describing a lovely forested national park at the eastern tip of the island. The Odonata are outstanding, and I would like to be there.

Changing pace, we feature an article by Martha Briggs on everyone's favorite dragonfly artisan, Louis Comfort Tiffany. Perhaps you have been lucky enough to have seen one of these fabulous lamps, perhaps even lucky enough to own one. Doubtless Tiffany's work was a large part of the recent popularity of dragonflies as art objects.

We include an account of a trip to Nicaragua by the French odonatist François Meurgey. His capture of ***Lestes secula*** represents a considerable range extension for this species.

Tim Manolis adds to the problems of those facial spines on ***Ophiogomphus.*** We know females sometimes have spines on their heads, but Tim found males with spines! We still have never heard a good explanation for the female spines. Certainly they must get the male's attention during mating! But why would males have spines??

Mark O'Brien send along a note about ***Gomphus quadricolor***, which was found linked to just a bit of a mating female. How the bird managed to get this much of the female is a mystery.

We found a note on the web about a scarce and lovely dragonfly halting the filming of a movie in Australia. François Mergeuy adds two new species to the list for Guadeloupe, one of the most speciose islands of the Lesser Antilles.

We review three books in this issue. Ed Lam's "Damselflies of the Northeast" is certainly one of the finest guides ever published. Kathy Biggs' handy guide to southwestern Odonata will be essential for anyone traveling to the American southwestern desert. Finally, volume 4 of the Ontario Odonata series will give prospective attendees to next year's DSA meeting in Ontario an idea of the vigor of Odonata studies in this province. Walker would have been proud!

There are several revisions to the common names. Some are required as new species are described or recognized. A few others were confusing.

A new form of acetone is now widely available and may prove to be handier than the square cans we have been buying.

David Small is organizing a project dedicated to studying the distribution of ***Hetaerina americana***, which has a limited distribution in the Northeast. Jerrell Daigle's note lists the original members of the DSA, which was formed at a meeting in Tennessee in 1989.

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2004 ANNUAL DSA MEETING IN IOWA

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A much debated issue at the 2004 DSA meeting was whether the Donnelly Effect required Nick's presence or it had become a generic term applied anywhere it rained on dragonfly enthusiasts. Iowa had had its share of rain well before we arrived and the debris caught well up in flood plain vegetation everywhere showed what nearly a foot of rain had done in mid-May. But Mother Nature wasn't done yet.

Ten of us (Steve Valley, Jim Johnson, John Abbott, Greg Lasley, Kurt Mead, David Allen Fitch, Dennis Paulson, Hal White and hosts Steve and Marcia Hummel) arrived July 5 at the Super 8 Motel in Independence, Iowa, for the pre-meeting collecting trip - a day late to take in presidential candidate John Kerry's Independence Day speech there. Seeing a slight break in the skies around 4 pm and anxious to get into the field to look for the soon-to-be-described ***Ophiogomphus smithi***, we headed ten miles east to Winthrop where Route 939 crossed Buffalo Creek. The county park and access area there was closed due to previous flood damage, but that deterred us little as we surveyed the damage and took a quick look around the area. Within minutes the skies darkened, thunder clapped, and large raindrops fell. We all took shelter from the deluge in a pavilion which was filled with sand washed in from previous flooding. The half-hour bonding experience included the requisite Donnelly Effect discussion and quizzing Jim Johnson on how he slipped in for an unexpected swim in Buffalo Creek. During a break in the downpour, we made it back to the cars and returned to the Super 8. A

teneral female ***Argia*** was the odonatological highlight at Buffalo Creek.

During dinner at a local restaurant, the downpour continued. Although we thought we had a lot of rain, points to the northeast, in the headwaters of Buffalo Creek and other streams of our interest, there was as much as 7.75 inches of rain. Clouds and news of local flooding greeted us Tuesday morning as the group gathered in the lobby to decide what to do. (Guests must have been curious seeing only two males in the group without full facial hair.) Less water had fallen to the west, so we split up and explored a number of access points along the rising Wapsipinicon River near Dunkerton and its tributaries mostly in Buchanan and Black Hawk Counties. Fleeting periods of sunshine did not have a noticeable effect on the Odonate fauna. Highlight of the day were three ***Stylurus amnicola*** seen and photographed at Bruggeman Park among the numerous young ***Sympetrum*** and abundant mosquitoes.

Clouds prevailed Wednesday as well and didn't start to break until after 6 pm. It was cold as some of us headed for the Cedar Hills Sand Prairie where there was a marsh and a fen reported to have Sphagnum. Despite the low overcast and a temperature of 59°F, we found eleven species, mostly single individuals hunkered down in the vegetation. Moving further west and joined by Jeff Barker, a friend of Kurt's from northern Minnesota, some of us went to Big Marsh in Butler County where it had warmed to the low 60's with a brisk northwest wind, but still no sun. (Sun finally appeared at suppertime.) Six species were found there including quite a few ***Enallagma antennatum***. Steve and Marcia Hummel were joined in the morning by long-time friend Diane Slaughter from Independence. They explored southern Buchanan County, finding a dozen species.

Thursday dawned beautiful and stayed beautiful. At 6 am the temperature of 48°F broke the all time low temperature record for Cedar Falls by three degrees. We plotted our separate ways to Luther College in Decorah, about sixty miles away where the main DSA meeting would begin the next day. A favorite stop Thursday was on the Maquoketa River at Backbone State Park in Delaware County. The water, though still turbid, had subsided and the sandy-bottomed river flowing near dolomite cliffs was wadeable. Despite the ideal weather, Odonates were few and far between. Highlights there were a single ***Gomphus fraternus*** collected and single ***Calopteryx aequabilis*** and ***Pantala hymenaea*** seen. A stop at Frog Hollow Lake on the Volga River in Fayette County produced 14 common species. While few, they were gratifying in their numbers.

The probably incomplete list of species seen or collected by participants during the pre-meeting trip includes: ***Calopteryx aequabilis, C. maculata, Lestes australis, L. rectangularis, L. unguiculatus, Argia apicalis, A. moesta, A. tibialis, Enallagma antennatum, E. aspersum, E. basidens, E. carunculatum, E. civile, E. exsulans, E. geminatum, E. hageni, E. signatum, Ischnura verticalis, Nehalennia irene, Anax junius, Arigomphus submedianus, Gomphus fraternus, G. graslinellus, Progomphus obscurus*** (?), ***Stylurus amnicola, Macromia illinoiensis, Epitheca costalis, E. cynosura, E. princeps, Somatochlora linearis, Celithemis eponina, Erythemis simplicicollis, Leucorrhinia intacta, Libellula luctuosa, L. lydia, L. pulchella, Pachydiplax longipennis, Pantala flavescens, P. hymenaea, Perithemis tenera, Sympetrum obtrusum, S. rubicundulum, S. semicinctum***, and ***Tramea lacerata***.

As the main group worked in eastern Iowa, Nick and Ailsa Donnelly worked their way down through western into southern Iowa where they met up with Ann Johnson. They were looking for ***Epitheca*** to expand the known distribution of ***E. costalis*** in Iowa.

Based on previous DSA meetings where participants complained about the sessions every evening that interfered with preparing the day's catch, organizers planned a different schedule in which Friday and Sunday would be totally free for collecting and socializing while Saturday was scheduled for an all day meeting. The weather foiled the plans. With a gloomy overcast and assurance of heavy rain, Acting-President John Abbott in consultation with others moved the business meeting and a talk by Hal White on, "The Odonatological Legacy of George and Alice Beatty", to Friday morning with the hope that the afternoon would be nicer and people could get into the field. With little break in the weather after lunch, Nick Donnelly led a discussion on vexing taxonomic problems in North American Odonates. In particular, problems with ***Epitheca, Sympetrum,***

Amphiagrion, and ***Erythemis*** were discussed. That impromptu session was followed by another led by Ken Tennessen on the design of nets to collect nymphs (larvae). The session broke up about 3 pm and some participants eager to get in the field headed out in the muggy overcast.

As scheduled, the main meeting started on Saturday. Being inside this cloudy morning was no problem. We were joined by a contingent of students from the University of Minnesota who came down for the day. Dennis Paulson started things off by describing the rich Odonate fauna (186 species!) within walking distance of Explorer's Inn in the Tambopata Region of Peru. Ken Tennessen followed with a talk on the fauna in nearby Bolivia where almost 50% of the 201 species found are new to Bolivia including 18 new species. Tim Vogt then reported on the discovery of new populations of Hine's emerald (***Somatochlora hineana***) in Missouri and described the species' specialized habitat preferences. Ryan Caesar outlined his graduate thesis plans at Ohio State University to work out the molecular phylogeny of the genus ***Argia***. That was followed by Eric Pilgrim's primer on what can or cannot be learned with DNA-based taxonomy.

The afternoon sessions began with Nick Donnelly detailing the frustrations of distinguishing ***Epitheca cynosura, costalis***, and ***petechialis***, good species that seem to have intergrades in different parts of their range. Mike May described an amazing Amphipterygid damselfly preserved in Baltic amber. Seth Bybee impressed everyone with his undergraduate research on Odonata Phylogeny. By far the talk with the greatest general interest and discussion was by Carol Adderley who outlined her reasons for thinking that the double-headed axe so common in Minoan imagery is not an axe at all but rather a stylized dragonfly. Although many in the audience were not fully convinced, the hypothesis was attractive and elicited many thoughtful comments. Mike May completed the formal meeting by conceptualizing the reproductive fitness of dragonflies in terms of the energy costs and the feeding necessary to sustain reproductive activity. He then showed work by a former graduate student, Joel Baird, who studied these issues with ***Pachydiplax longipennis*** and ***Erythemis simplicicollis***.

With heat and humidity back and a thin overcast most participants spent some time in the field Saturday afternoon. Quite a few headed for Cardinal Marsh about 12 miles west of Decorah, while others explored nearby bank-full streams and wetlands on the Luther College campus. At days end, Marcia Hummel compiled a list of 38 species reported with most coming from Cardinal Marsh.

Sunday morning, Ann Johnson led a caravan of about ten cars to Clear Creek Fen in Allamakee County where the Missouri contingent, Tim Vogt, Joe Smentowski, Jane Walker, and Paul McKenzie, assessed the site as a possible Hine's emerald habitat. Although many of the hoped for plants were present, the "hydrology" was poor with limited water and few crayfish borrows. The brief visit terminated with a violent thunderstorm that produced heavy rain all the way back to Decorah and beyond. Later in the afternoon there was some clearing and small parties returned to Cardinal Marsh and other local habitats.

Additional species seen or collected during the meeting and not mentioned in the pre-meeting list included: ***Hetaerina americana, Lestes dryas, L. forcipatus, Amphiagrion*** sp., ***Argia fumipennis violacea, Enallagma ebrium, E. hageni, Aeshna constricta, Macromia illinoiensis, Sympetrum corruptum, S. costiferum, S. occidentale, S. semicinctum, S. vicinum***, and ***Tramea onusta. S. semicinctum*** is a new state record and the specimen certainly typified eastern forms, however, its debated relationship to western ***S. occidentale***, which also was collected, makes the record tentative.

In addition to those mentioned previously in various contexts, the following people attended the meetings: Peter Allen (president of the British Dragonfly Society) and his wife Cindy, Omar Bocanegra, Aaron Brees, Tim Cashatt, Lloyd Crim, Cindy Crosby, Duncan Cuyler, Jerrell Daigle, Jim Danzenbaker, Ailsa Donnelly, Ollie and Carol Flint, Bud Gode, Kiffnie Holt, Daryl Howell, Taellor Howland, Steve and Mary Jane Krotzer, Kirk Larson (of the Luther College Biology Department which provided sponsorship for our meeting which allowed our use of their wonderful facilities for free, Thanks Kirk), Bill Mauffray, Don and Janis Paseka, Linda Shelton, George Smolka, Larry Stone, Jessica Ware, Douglas and Sharon Rossman, Katie Hoppe, Ralph, Kartijin, and Janni Holzenthal, Rebecca Brown, Roger Blaknik, and Desi Robertson. Including Sid Dunkle, who was only able to attend the post-meeting portion, there

were a total of 64 attendees representing 23 states and 2 countries. Not listed is "Mary Lou", Greg Lasley's talking GPS unit that guided him flawlessly to motels, gas stations, and restaurants from anywhere without a harsh word even when he made a wrong turn.

Accommodations at Baker Village on the Luther College campus were great particularly with access to the Shirley Baker Commons building. Due to some overbooking, a few attendees were shuffled between two dormitories some distance from Baker Village but managed to participate in activities. The traditional parking lot meetings continued except in downpours. We missed Roy Beckemeyer, one of the meeting organizers, who was unable to attend due to a family medical emergency. Sid Dunkle, who also could not attended the meeting for related reasons, was able to join the few people who participated in the post-meeting trip to Appanoose County on the Missouri border.

On Monday, July 12, a small group consisting of Steve Hummel, Ann Johnson, Aaron Brees, Duncan Cuyler, George Smolka, Linda Shelton, Kiffnie Holt, and Taellor Howland traveled south to Centerville and met up with Sid Dunkle. The day was hot, humid, and sunny, which set the stage for Tuesday. On Tuesday we traveled as a group to several locations in Davis, Appanoose, and Wayne counties. We again experienced high water in the rivers, but the ponds were good. On Wednesday, which was a bit cooler and less humid, we visited locations in Wayne and Lucas Counties.

Species found during the post-meeting trip not seen earlier include: ***Enallagma traviatum, Ischnura hastata, I. posita, Aeshna multicolor, Nasiaeschna pentacantha,*** and ***Sympetrum ambiguum. Libellula vibrans,*** (a new record for Iowa) was found. Unfortunately, a voucher specimen was not collected, but it was observed by Ann Johnson, Steve Hummel (who got within a few feet and was able to observe the pattern on the wings), Sid Dunkle, Aaron Brees, and George Smolka.

All together the number of species collected, photographed, or observed on the pre-meeting trip came to 43, the main meeting was 42, and the post-meeting trip was 37. The total number of species for the entire meeting came to 62 (over half of the species known to occur in the state). Anyone who has additional data for the trip are asked to send it to Steve Hummel either by email or snail mail at the address given at the beginning of this article.

Despite the weather and relative scarcity of Odonates, participants from around the country were impressed by the state of Iowa. At every level of government, accessibility to boating, hunting, and fishing on public lands was encouraged by multiple access points, no fees for access, guide books, and well-marked road signs. Furthermore, no permits were needed to collect insects. Many of us wished our home states were similarly accommodating to dragonfly enthusiasts.

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2004 DSA POST-MEETING TRIP RESULTS IN NEW STATE RECORD

Ann Johnson

The post-meeting trip to South Central Iowa saw a huge change in weather from the rainy and cool northeast although evidence of earlier heavy rains made any potential stream wading impossible. The two day foray began on Tuesday with nine intrepid odesters exploring parts of Davis, Appanoose, and Wayne Counties. The heat was gruesome but we managed to add a few new county records, which will be detailed in a full state update at a later date.

Wednesday we dodged a thunderstorm to the south and finally starting finding some interesting bugs in Lucas County. Recently emerged Blue-faced Meadowhawks (***Sympetrum ambiguum***) were the stars of the show. George Smolka tried to provide the day's entertainment by swinging out over a swollen and dirty river for a cruising Cyrano Darner (*Nasiaeshna pentacantha*).

Our numbers now down to seven, it was time for the last stop on the last day of a fun week of odonating. We headed for the campground at Stephen's State Forest in hopes that someone could help us confirm the existence of Mocha Emerald (***Somatochlora linearis***) in Lucas County. Several were flying and Aaron Brees managed to snag one. While most of us were chasing after the ***Somatochlora***, Duncan Cuyler sprang into action and snatched a Flag-tailed Spinyleg (***Dromogomphus spoliatus***) we hadn't even seen. Someone else caught a Jade Clubtail (***Arigomphus submedianus***) and the captured ***Macromia*** had characteristics of both ***illinoiensis*** and ***georgina***.

After a trip to the restroom, I checked the muddy, shallow pool in the woods behind. Not unexpectedly there were a number of Slender Spreadwings (***Lestes rectangularis***), bit it was the critter across the pond that caught my eye. It was obviously a large ***Libellula*** with a pruinose thorax and surely looked like one I had last seen two years ago in New Jersey. In a quick trip back to the car to get my scope I ran into Steve Hummel and dragged him through the brush where we had great scope views of Great Blue Skimmer (***Libellula vibrans***), a dragonfly I had been actively seeking in southern Iowa. In a short time George, Aaron, and Sid Dunkle also had good looks at the bug as he began moving around up in the overhanging tress. Before we could get a photo, he shot straight up in the air and disappeared. Searches by both Steve and Aaron in the following days came up empty but summer isn't over…

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NEW ENGLAND ODONATE CONFERENCE APRIL 17TH 2004, ATHOL MASSACHUSETTS

Dave Small

It all started simply enough, the new Field Guide to Dragonflies and Damselflies of Massachusetts was out and waiting for the first full season of use. What were our energetic Ode enthusiasts going to do to while away the off season? The idea hatched over dinner as Jen Loose and Lynn Harper of the Mass Natural Heritage Program dined with Blair Nikula member of the Non-game Advisory board and co-founder of Ode News: Let's get all the New England Odonate folks together and see what everyone is working on... Simple enough, 50 or 60 people for an informal gathering... Where to have it? The Athol gang would do it. And so it began.

The first New England Odonate Conference was sponsored by Massachusetts Natural Heritage Program, Ode News and the Athol Bird and Nature Club and organized by Jennifer Loose, Blair Nikula, and Dave Small with the invaluable assistance of several ABNC members. The event drew 148 participants and became one of the largest gatherings of dragonfly enthusiasts ever in North America. The Athol venue is located in North Central Massachusetts in the heart of the Millers River Valley, a hotbed of odonate activity.

The heart of any conference are presenters which included most of New England and New York's leading Odonatists: From Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. The group presented short programs on the history of odonate study in the Northeast, reviews of odonate surveys in various states, results of local studies and taxonomic issues.

Concurrently the Millers River Environmental Center was host to an exhibit of award winning dragonfly and butterfly photographs by Manhattan's Alyce Mayo, art and books by David Carroll, Bob Marstall and Ed Lam, plus a demonstration of the new "Common Dragonflies and Damselflies of the Northeast" DVD produced by Dick Walton. We were particularly privileged to have Ed Lam debut his new "Field Guide to the Damselflies of the Northeast" a comprehensive guide to the species from Canada to Virginia. Ed picked up the first copies from the printer just the day before the conference.

Beyond the excellent food and great speakers, a major highlight of the event was the chance to meet so many ode enthusiasts. Many friendships were formed or renewed that beautiful April day. Although this will probably not be an annual event it will not be the last New England Odonate Conference.

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2004 EGLIN AFB, FLORIDA MEETING

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The adult population of Florida ***Ophiogomphus*** continues to elude the Dragonfly Society of the Americas. During the 3rd annual meeting held 09-11 April 2004 at Eglin Air Force Base (Niceville, Florida), dragonfly enthusiasts tried to capture adult Ophiogomphus and unfortunately once again came up empty handed in the snaketail department. Attendees included host Theresa Thom, as well as Donald Ray, and Jerrell J. Daigle from Florida. Carl Cook came down from Kentucky. Steve Krotzer, Paul Miliotis, and Ken Tennessen followed him from Alabama. Our friendly airline pilot, Giff Beaton, came down from Georgia. Gayle and Jeanell Strickland ventured over from Louisiana, and this year's snowbirds included Ailsa

and Nick Donnelly, Peggy and Fred Sibley from New York, and Mike Thomas from Connecticut!

Species level accounts directly supports the work and objectives of the U.S. Fish and Wildlife Service Stream Monitoring Program on Eglin. The main purpose of adult dragonfly surveys on Eglin is to supplement bioassessment techniques with species level inventory of the roughly 1000 km of streams and freshwater located on Eglin property. For the weekend we were again focused on Odonata, with our senses especially tuned to look for adults of the new Florida Ophiogomphus since we got only one female adult last year. We had such a successful year in 2003 (we documented the presence of 50 species) that it was difficult to add any new records! Ken Tennessen and Fred Sibley saved the day with collections of the enigmatic ***Hetaerina americana*** and ***Nehalennia integricollis***. Jerrell has not yet collected ***H. americana*** in Florida. An account summary about ***H. americana*** by Ken Tennessen is included at the end of this report. I have collected ***H. americana*** larvae, but until this weekend, had not collected adults.

Unfortunately, we had no luck seeing any adults for ***Ophiogomphus***, which was our main target. We were evidently too late in the year to find them swarming but we will be ready mid-March next year. We now have several reared specimens to compare with southeastern ***Ophiogomphus*** species. It appears to be related to an undescribed ***Ophiogomphus*** species found in southern Alabama, but I am potentially leaning towards new species status. Our unfortunate snaketail luck manifested itself into bad car karma, which included Nick and Ailsa Donnelly pushing their rented vehicle's limits in the deep Lakeland Sands of Eglin. The curse of the maroon minivans (I think this has Blockbuster potential) overheated Jerrell's vehicle and required a new battery and socket set for Carl Cook. On a positive note, we got to sample longer at Anderson Pond and drink more beer at dinner as a result of the incidents.

All in all, it was a great trip! We saw new habitats, improved our vehicles as a result of several misadventures, and found a much better hotel in the Regency Inn in Niceville. To date, we have collected 55 adult dragonfly species on Eglin. 2004 is the year for multiple Odonate surveys on Eglin to really get a good species list. We have targeted Okaloosa and Walton counties, but we don't want to exclude Santa Rosa County! There will be plenty of sampling opportunities, so keep your nets ready for more adventures! We look forward to seeing you at the 2004 Southeast Regional meeting in Kentucky at Mammoth Caves State Park, June 10-13!

Aloha!

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HETAERINA AMERICANA IN FLORIDA

Ken Tennessen

On April 10, 2004, while collecting for larvae in Rogue Creek (a tributary of Turkey Creek), off Hwy. 232, Eglin Air Force Base (Okaloosa Co.), I noticed several ***Hetaerina*** perching on twigs over the water. The creek narrowed at this point and the current was notably faster than in the wider, upstream part. Although I was quite certain they were ***H. americana***, I collected a few individuals to make sure. I saw them along about 50 feet of stream where it was about 10 feet wide. The clear water was about 2 feet deep, the substrate was sand/gravel, and there was a lot of Golden Club along the banks. I did not see any immediately upstream or downstream of the narrowed portion of the stream.

This species is recorded in Florida from only one river system, the Chipola River in Jackson and Calhoun Counties (Johnson 1973). That locality is approximately 130 kilometers (80 miles) east of the locality where I found them in Okaloosa County. The individuals I collected were fairly young, as the base of fore wings in the males was red but that of the hind wings was still brown. Johnson (1973) stated the species was absent in southern Alabama, but Tennessen et al (1995) reported it for Covington Co., just north of Okaloosa County, Florida. The scarcity of fast water habitats in northern Florida is probably a major factor limiting the distribution of H. americana.

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2004 DSA SOUTHEASTERN REGIONAL MEETING, MAMMOTH CAVE, KENTUCKY, JUNE 10-13

Ellis Laudermilk

The 2004 DSA Southeastern Regional Meeting began with a gathering of participants on June 10 at the Cave Research Foundation in Hart County, Kentucky. The weather was hot and humid, and conditions were once again favorable for thunderstorm development. In fact, Kentucky experienced some very unsettled and severe weather in the weeks preceding the meeting, and Lexington recorded the wettest May on record. Consequently, the incomparable Green River was too high for wading, but some local ponds and the East and South forks of the Little Barren River, as well as the main stem of the Little Barren River, yielded a nice array of Kentucky odonates. Thirteen people made an appearance, some briefly, but we counted them anyway. Nick and Ailsa Donnelly were with us in spirit, if not in body, after some untimely vehicle trouble. The participants observed a total of 47 species (see below).

Meeting participants included Mary Jane and Steve Krotzer and Paul Miliotis (AL); Mike Thomas (CT); Jerrell Daigle!!! (FL!!); Brenda Bacon, Mark Depoy, Doug Foster and Kurt Helf (Mammoth Cave National Park, KY); Bob Cumming and Sandy Garrett (TN); Carl Cook and Ellis Laudermilk (KY).

A list of the 47 species observed by the meeting participants:

Calopterygidae: ***Calopteryx maculata*** (Ebony Jewelwing), ***Hetaerina americana*** (American Rubyspot)

Lestidae: ***Lestes eurinus*** (Amber-winged Spreadwing), ***L. rectangularis*** (Slender Spreadwing)

Coenagrionidae: ***Argia apicalis*** (Blue-fronted Dancer), ***A. fumipenis violacea*** (Variable Dancer), ***A. moesta*** (Powdered Dancer), ***A. tibialis*** (Blue-tipped Dancer), ***Enallagma aspersum*** (Azure Bluet), ***E. basidens*** (Double-striped Bluet), ***E. exsulans*** (Stream Bluet), ***E. signatum*** (Orange Bluet), ***Ischnura hastata*** (Citrine Forktail), ***I. posita*** (Fragile Forktail), ***I. verticalis*** (Eastern Forktail)

Petaluridae: ***Tachopteryx thoreyi*** (Gray Petaltail)

Aeshnidae: ***Anax junius*** (Common Green Darner), ***A. longipes*** (Comet Darner), ***Epiaeschna heros*** (Swamp Darner)

Gomphidae: ***Arigomphus villosipes*** (Unicorn Clubtail), ***Dromogomphus spinosus*** (Black-shouldered Spinyleg), ***D. spoliatus*** (Flag-tailed Spinyleg), ***Gomphus crassus*** (Handsome Clubtail), ***G. lineatifrons*** (Splendid Clubtail), ***G. lividus*** (Ashy Clubtail), ***G. quadricolor*** (Rapids Clubtail), ***Hagenius brevistylus*** (Dragonhunter), ***Stylogomphus sigmastylus***

Cordulegastridae: ***Cordulegaster obliqua*** (Arrowhead Spiketail)

Macromiidae: ***Macromia illinoiensis*** (Illinois River Cruiser)

Corduliidae: ***Epitheca princeps*** (Prince Baskettail), ***Neurocordulia yamaskanensis*** (Stygian Shadowdragon), ***Somatochlora linearis*** (Mocha Emerald)

Libellulidae: ***Celithemis elisa*** (Calico Pennant), ***C. fasciata*** (Banded Pennant), ***Erythemis simplicicollis*** (Eastern Pondhawk), ***Erythrodiplax minuscula*** (Little Blue Dragonlet), ***Libellula cyanea*** (Spangled Skimmer), ***L. incesta*** (Slaty Skimmer), ***L. luctuosa*** (Widow Skimmer), ***L. pulchella*** (Twelve-spotted Skimmer), ***L. vibrans*** (Great Blue Skimmer), ***Pachydiplax longipennis*** (Blue Dasher), ***Perithemis tenera*** (Eastern Amberwing), ***Plathemis lydia*** (Common Whitetail), ***Tramea carolina*** (Carolina Saddlebags), ***T. lacerata*** (Black Saddlebags)

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VERMONT DSA GATHERING - COUNTY COUNTS ARE BIG WINNER

Mike Blust

The breakfast at the P & H Truckstop near Groton was worth the morning's drive from Quechee. This was good, as the 50-degree conditions, wind and cloud cover made it apparent that the odonate activity would be sparse. With participants from Virginia and even Arkansas in the group, questions

arose about which season it was in Vermont. Since there was no apparent rush to get into the field, we enjoyed the food and fellowship (as well as the obligatory Paul Brunelle stories) before deciding to see what 20 desperate odonatists could drum up in these conditions. Sometimes chances pay off. The clouds began parting as we approached the Lanesboro Bog in Groton State Forest (Washington County) and temperatures slowly began to rise. The few odes that were begrudgingly induced to show themselves when we first arrived were soon joined by more individuals as well as more variety. Sharon Riley netted a two prizes: ***Nanothemis bella*** (Elfin Skimmer) and ***Coenagrion resolutum*** (Taiga Bluet). ***Nehalennia gracilis*** (Sphagnum Sprite) was a life-ode for a number of the participants. Copies of Ed Lam's book were pulled out to check the differences between ***gracilis*** and the overly abundant ***irene***. Ed's book received a lot of use during the weekend, except when Ed himself was near enough to call over to examine a specimen. I suspect he had his fill of female ***Enallagma***, but his good-natured assistance was always at the ready.

Our next stop was Marshfield Pond where Michael Veit had a ***Gomphus adelphus*** (Mustached clubtail) in hand before most of us had time to open the car door. Meanwhile, Blair "Somatochlora" Nikula turned up a nice specimen of ***S. elongata***, while ***Helocordulia*** and several Gomphids, including ***Hagenius brevistylus*** (Dragonhunter) and ***Stylogomphus albistylus*** (Least Clubtail) kept nets busy along the outflow stream.

That evening, Mark McPeek of Dartmouth gave the group an enlightening talk integrating the phylogeny and ecology of the ***Enallagma***. I am sure we will all be reflecting on aspects of Mark's research as we encounter various assemblages of zygops in our own haunts. I personally am intrigued by the learning that the ***cyathigerum / vernale*** split reflects the fish/fishless habitat split among the damsels.

On the following day, DSA folk gathered to contribute their expertise to the Vermont Institute of Natural Science BioBlitz which had started at 3:00pm on Friday, and would end at 3:00pm on Saturday. Once again the day was cool and damp from light rain and heavy dew. While surveys of some taxonomic groups were unencumbered by the conditions, the odes were not cooperating. Bryan Pfeiffer, leader of the BioBlitz and co-host of the DSA gathering, charged the group with making sure the list of odes exceeded the butterfly list. (Note: Bryan is also coordinating the Vermont Butterfly Survey!) The sun finally broke through at about 2:00pm leaving DSA members one frantic hour to fill the many gaps for the day. The resultant 38 species was respectable given the conditions, and it did indeed edge out the 35 species of butterflies.

In the Odonatological frontiers of Vermont, it soon became obvious to the visitors that many counties within the state are under-surveyed. When you are asked to keep your eyes peeled for ***Calopteryx maculata***, or when your declaration of "12-spot" is met with "New county record!" you realize, "This ain't Massachusetts." Blair and a few others opted to visit the wilds of the Northeast Kingdom in Essex County. They were a bit dismayed to find that not even their two ***Somatochlora*** species (***kennedyi*** and ***minor***) were new to that county. They can thank Frank Carle and Hal White for that. As the dust settled (an odd expression given the weather we had), it looks like the biggest legacy of the DSA 2004 Quechee gathering will be the 30+ new county records added to the state data.

Members from the group took trips to other parts of Vermont as the weekend gathering disbanded. Some were successful in finding the lone New England population of ***Enallagma antennatum*** (Rainbow Bluet) in western Vermont while others added some species to Windham County's list as they headed back to Massachusetts. Others may still be wandering through the byways of our State. Bryan and I would like to thank the many participants for their help, their wisdom, and their camaraderie. Some results from the gathering can be viewed at the Vermont Odonata website - http://campus.greenmtn.edu/dept/NS/dragonfly/index.htm

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2004 GREAT LAKES ODONATA MEETING

Renee Boronka, Associate Director, Center for Conservation & Biodiversity, Cleveland Museum of Natural History

Nineteen people attended this year's GLOM held in northeast Ohio from June 23rd to 26th. We ordered up and received several days of gorgeous weather. The one scheduled indoor day turned out to be the only rainy day all week!

We started the week with a welcome dinner at Debonne Winery in Madison, Ohio. During dinner, we were greeted by a beautiful Least Clubtail. It literally flew into the semi-screened-in porch where dinner was served! What a great start to a fabulous week of field trips to an array of areas throughout the Cleveland region. In addition to the field trips, participants experienced a behind-the-scenes tour of the Cleveland Museum of Natural History Collections area.

Field visits were made to many different sites. Species of significance netted along the Grand River include Splendid Clubtail (***Gomphus lineatifrons***), Rapids Clubtail (***Gomphus quadricolor***) and Green-faced Clubtail (***Gomphus viridifrons***). Along Rock Creek, we witnessed a fine population of Rainbow Bluet (***Enallagma antennatum***). On Thursday at Singer Lake Bog, we had Racket-tailed Emerald (***Dorocordulia libera***) and Mocha Emerald (***Somatochlora linearis***). For those brave enough to venture out on the bog mat, Elfin Skimmers (***Nannothemis bella***) were on the wing. Museum Botanist Dr. Jim Bissell was kind enough to carry a male and female Elfin Skimmer to the shoreline for those not willing to walk in waste-deep poison sumac waters! On Saturday, we started the day at the Museum's North Kingsville Sand Barrens. Many common species were found throughout the preserve. The more noteworthy species found include, Prince Baskettail (***Epitheca princeps***) and Western Slender Bluet (***E. traviatum westfalli***). We concluded the last day of the GLOM along the Ashtabula River, netting a Least Clubtail (***Stylogomphus albistylus***). Our first species of the week, turned out to be our last as well!

For a complete list of species found throughout the week, those in attendance and pictures of the 2004 Great Lakes Odonata Meeting, visit: <http://www.cmnh.org/collections/botany/documents/GLOM.html>

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2005 DSA NATIONAL MEETING TO BE HELD IN ONTARIO

The 2005 DSA national meeting will be held in Arnprior, Ontario, which is on the Ottawa River. The dates are 9 – 12 July and the organizers are Paul Catling and Colin Jones.

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ODONATE ECOLOGY AND EVOLUTION SYMPOSIUM

e-mail from
Christopher Beatty

I am very happy to write with more information on the Odonate Ecology and Evolution Symposium (OEES) to be held at Carleton University in Ottawa, Ontario. This event will take place from September 17th-19th, 2004. If you wish to give an oral presentation or poster at this symposium, please send an e-mail to Christopher Beatty at beattych@yahoo.com or cbeatty@connect.carleton.ca and include:

1) whether you are providing an oral presentation or poster
2) a title and abstract (no more than 200 words)

If you wish to submit more than one presentation or poster, please include the information for each in your message. Multiple oral presentations may be limited due to time constraints, so if you submit more than one presentation title please indicate your order of preference. Please submit your titles and abstracts by Monday, August 16th 2004.

There is no registration fee for this event. We are planning a dinner for attendees on the evening of Saturday the 18th, and will ask for a fee if you attend. Costs for the dinner will be forthcoming.

We will leave accommodation arrangements to the attendees; for information on local hotels (and for other general information on the symposium) please see the event website at http://chat.carleton.ca/~cbeatty/OEES.htm For a campus map and driving directions to Carleton University, please visit the university website by clicking on the Carleton logo at the bottom of the page.

Thank you very much for your interest in this event. Please let us know if you have any questions concerning the event or if we can help you with any arrangements.
Sincerely, The OEES organizing committee (Christopher D. Beatty Doctoral Candidate Department of Biology Carleton University 1125 Colonel By Drive Ottawa, ON K1S 5B6 Canada <http://chat.carleton.ca/~cbeatty/ >

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ADIP MEETING IN HALIFAX

A recent e-mail message from Paul Brunelle proposes a meeting of the Atlantic Dragonfly Inventory Project (ADIP) in Halifax NS from Friday 29 October to Sunday 31 October. For further information contact Brunelle at <as849@chebucto.ns.ca>

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YAQUI DANCER (*ARGIA CARLCOOKI*, DAIGLE 1995), NEW DISTRIBUTIONAL RECORDS FOR NORTHERN MEXICO AND THE U.S.

Robert A. Behrstock, 10359 S. Thicket Place, Hereford, AZ 85615 <rbehrstock@cox.net>
Doug Danforth, P. O. Box 232, Bisbee, AZ 85603 <danforthdg@aol.com>
Sandy Upson, P. O. Box 1453, Bisbee, AZ 85603 <sandyupson@excite.com>

With approximately 110 described species, ***Argia*** constitutes the largest genus of strictly New World odonates, greatly outnumbering many entire families (Garrison 1998). Its members, usually referred to in English as "Dancers," are medium to large damselflies, frequently occurring near flowing water where they usually perch on the ground, rocks, or low vegetation. Despite their often strikingly colored and patterned bodies, many are confusingly similar. Most North American species may be identified by color and pattern; however, in Latin America, genitalia must often be examined to confirm identification. Garrison (1994) recognized 29 Argia north of Mexico. Subsequently, Sierra Madre Dancer (***A. lacrimans***) was added to the North American fauna from the Chiricahua Mts. of extreme SE Arizona (Cochise Co., Shake Spring and Bonita Spring, Chiricahua National Monument, 8-10 August 1995, C. M. and Oliver Flint, 5 males, in collections of U.S. National Museum & R. W. Garrison). Later, Jeff Cole located ***lacrimans*** in the Huachuca Mountains of W Cochise Co. (Cole 1997), and Sandy Upson found it common at Leslie Canyon NWR on the southern flank of the Swisshelm Mountains of E Cochise Co. Although many U.S. Argia are common to abundant, several such as Sierra Madre Dancer (***A. lacrimans***), Sabino Dancer (***A. sabino***), Tarascan Dancer (***A. tarascana***) and Tezpi Dancer (***A. tezpi***) are known from only a handful of sites near the U.S.-Mexico border and are infrequently seen. The distribution of U.S. species reflects their Neotropical, and often montane zoogeographic affinities. Twenty species are known from S and W Texas, New Mexico, Arizona and S California, while only six occur E of the Mississippi River, none exclusively so. Paulson and Gonzalez Soriano (2000) list 47 Argia from Mexico; a number of these occur in Sonora but have not (as yet) been encountered in the U. S. During the last three years additional range extensions northward into Sonora have been recorded (e.g., ***A. anceps, A. funcki, A. harknessi, A. oculata, A.*** cf. ***ulmeca*** and one undescribed species). Much of Mexico's N border is straddled by mountain ranges with permanently flowing water, or crossed by large river valleys, all of which favor dispersal of aquatic insects. Not surprisingly, the border region continues to produce new U.S. records of Neotropical odonates.

On 8 September 1998, Behrstock photographed odonates at San Bernardino National Wildlife Refuge, Cochise County, in extreme SE Arizona. Formerly San Bernardino Ranch, this desert site, located about 17 miles (27 km) E of Douglas, and lying at 3720-3920' elev. has produced some noteworthy odonates at its ponds and artesian wells including: Spine-tipped Dancer (***Argia extranea***), Claw-tipped Bluet (***Enallagma semicirculare***), Malachite Darner (***Remartinia luteipennis***), Turquoise-tipped Darner (***Rhinoaeschna psilus***), and Slough Amberwing (***Perithemis domitia***) (pers. obs.). Drainages on the Refuge feed into the headwaters of the Yaqui River that may serve as an entomological dispersal corridor from W Chihuahua and E Sonora, Mexico.

Among Behrstock's slides were a male Argia and a tandem pair (Photo 1), all perched 1 m or less above the ground on grasses near an overflowing artesian well at Twin Ponds. Based on their color and pattern, they could not be associated with available descriptions of any known U.S. species. After examining the slides, Sid Dunkle (pers. comm.) wrote that they represented a species not yet known from the U.S., at least superficially resembled ***A. carlcooki*** from Morelos, Mexico, and, without genitalia to examine, were not identifiable to species. Rosser Garrison (pers. comm.) concurred that they were a species from south of the border (the Mexican border is less than one mile south of the collecting site), might represent an undescribed taxon, and that the slides

were not reliably identifiable. Both encouraged the collection of specimens.

Early the next year, Behrstock sent copies of his slides to Carl Cook who compared them with a paratype of a male ***carlcooki*** in his collection, and wrote (10 March 1999) that the color pattern closely agreed with the paratype's but: "the lateral and humeral dark stripes of the thorax are about 30% narrower on the photographed example than on the paratype, the legs and abdominal terminal appendages in your photos are largely light colored, in the paratype they are mostly dark. These differences do not completely eliminate the possibility that your examples could be ***carlcooki***, but they cast doubt in my mind. I believe it is more plausible that your dragonfly is undescribed." Shortly thereafter, Jerrell Daigle, the describer of ***carlcooki***, examined the slides and compared the female to a female ***carlcooki*** in his collection, noting, as did others, their striking similarity. Similarities notwithstanding, there was an understandable reluctance on all parts to attribute these photos to a species known from no areas closer than Jalisco (fide Paulson and Gonzalez Soriano), some 1500 kilometers from the U.S. border. In the meantime, the Common Names Committee of the Dragonfly Society of the Americas proposed several English names for ***carlcooki***, eventually settling on "Yaqui Dancer." Many western U.S. ***Argia*** bear names that commemorate American Indian tribes. Yaqui Dancer is appropriate for several reasons: It pertains to the Yaqui Indians, now living in Sonora, Mexico; the Yaqui River drainage of NW Mexico and SE Arizona (now known to harbor a large population of the species); and the Yaqui Indian Deer Dancer or Yaqui Dancer, a popular folk figure whose dress and dance movements honor the deer with which these Indians shared their world.

In late August of 1999, Behrstock returned to SE Arizona to collect odonates with Jerrell Daigle, Steve Krotzer, and Bill Mauffray. On 2 September, they visited San Bernardino NWR where Krotzer and Behrstock spent several hours examining odonates around Twin Pond and several nearby bodies of water, both flowing and still. Both Anisoptera and Zygoptera were abundant, but they saw no evidence of the unidentified Argia. During numerous additional trips to San Bernardino NWR, Sandy Upson also failed to locate this species.

Later, on repeated occasions from 2001 through 2003 and at multiple sites throughout E Sonora, Doug Danforth and Sandy Upson found individuals showing the traits of ***Argia carlcooki*** (Photo 2). The nearest of these sites is in the Moctezuma municipio (= county), approximately 112 mi (180 km) below the U.S.-Mexico border and due S of San Bernardino NWR. Other municipios of record include San Pedro de la Cueva, Sahuaripa, Yecora, and Rosario, most in localities of spring fed streams in the Rio Yaqui drainage, as well as the Alamos municipio on the Rio Cuchujaqui in the Rio Fuerte drainage. All of the above are on the W slope of the Sierra Madre Occidental. A seemingly aberrant further sighting occurred in the La Colorada municipio on the Rio Matape at San José de Pimas. There, at 1130' (apparently the lower end of the species' altitudinal limits in Sonora), ***carlcooki*** occurred on a river that is larger, sunnier, and more open than other sites where observations had been made. Danforth and Upson feel that ***carlcooki*** is reliable enough to be considered a "sure thing," from March through December if not year round, on visits into the lower reaches (1200' to 5000' altitude) of the central or southern sections of eastern Sonora's Sierra Madre. To date, Danforth and Upson have not found ***carlcooki*** anywhere N of the Moctezuma municipio, although a number of as yet unvisited localities in NE Sonora could plausibly harbor this species.

As noted above, Carl Cook pointed to differences in the ratio of dark maculation to pale ground color between his paratypes and the individuals photographed by Behrstock at San Bernardino NWR, the latter tending toward a reduced amount of black. Based upon ***carlcooki*** examined by Danforth and Upson, all from E Sonora, it seems that light-colored individuals predominate during the early part of the flight season (i.e., March) and darker individuals predominate later (i.e. August and onward), perhaps coinciding with the Sonoran monsoon season. Note that "lightness" as intended here refers to the relative extent of pale color vs. black markings; it is not a reference to brightness of the ground color.

Differences in relative darkness occur on the head, humeral and lateral thoracic stripes, the large lateral spots on abdominal segment 2, and the usually anvil-shaped, sub-basal lateral spots on abdominal segments 3-6. Except on the head, these patterns remain essentially the same, although their extent or intensity may vary (Photos 3-4).

On the head, the lightest individuals show the postocular spots being immediately contiguous to the compound eyes and continuous as well with the occipital bar (Photo 3). On the darkest individuals, the postocular spots are separated from the compound eye by a narrow band of black. Similarly, in the dark individuals, the sutures defining the occipital bar are black, thus breaking the continuity with the postocular spots (Photo 4).

On the thorax, the humeral stripe is thin in lighter individuals and is deeply forked (i.e., at, or even anterior to its midpoint) (Photo 3). In darker individuals, the humeral stripe is greatly thickened and the branches appear partially fused-the shallow fork representing only the posterior 15% or so of the humeral stripe (Photo 4). Each extreme shows a barbed lateral stripe on the metapleural suture, thin in light individuals and thick in dark ones. On abdominal segment 2, the lateral spot is large, solid and clearly tri-lobed in darker individuals. Among lighter ones, the spot is not solid black but has one, two, or all of the darker lobe tips separated by paler intervening areas (Photo 3). Intermediate individuals have variably anvil-shaped lateral spots on the sub-basal area of segments 3-6 (Photo 5). On darker individuals, these spots become thicker, blockier, and less anvil-shaped.

Carl Cook noted differences in appendage color between his darker paratypes and lighter individuals photographed by Behrstock. Individuals from Sonora have a constant pattern of light and dark. The cerci are a light chocolate brown, while the paraprocts have a diffuse light area on the lateral surface and a small, more distinct white area on the dorsal surface immediately anterior to the upper branch. Although individuals with dark paraprocts may be encountered, typically, the stubby lower branch is light.

In the field, the pale blue coloration of ***Argia carlcooki*** easily distinguishes it from the otherwise similar ***A. immunda***, which is matte violet in color and exhibits a more striking pattern of alternating light and dark areas on the abdomen. Initially, confusion with ***A. extranea*** can occur, as the pale color of this species can be an almost identical blue (see color notes below in Garrison's updated key). In hand, ***extranea*** exhibits a clearly unforked humeral stripe that is thick and blocky at its anterior end, abruptly narrowing to a hairline for approximately 45% of its upper or posterior portion (Photo 6). Additionally, ***extranea*** possesses four antenodal cells; ***carlcooki*** and ***immunda*** have three.

In Garrison's 1994 paper, male ***Argia carlcooki*** will key to Key M-6 (Cercus in dorsomedial view entire, but armed with a single decumbent tooth at extremity, or recessed toward mesal margin) and finally to ***Argia extranea*** (couplet 4(1').

Couplet 4 of Key M-6 may be modified to accept ***Argia carlcooki*** as follows:

4(1'). Forewing with four postquadrangular cells, cercus in dorsomedial view longest distoposteriorly (Fig. 1); paraproct in lateral view with ventral branch longer than dorsal branch, extending posteriorly beyond tip of cercus (Fig. 7); with well defined black along tergites 9-10 (Fig. 6); pale coloration vivid blue; southeastern Arizona south through Southern Mexico . . . . . ***extranea***

4'. Forewing with three postquadrangular cells, cercus in dorsomedial view longest distoposteriorly (Fig. 2); paraproct in lateral view with ventral branch subequal to or shorter than dorsal branch (Fig. 8); with well defined black along tergites 9-10 (as in Fig. 6); pale coloration blue; extreme southeastern Arizona through Michoacán and Oaxaca States, Mexico . . . . . ***carlcooki***

4". Forewing with four postquadrangular cells, cercus in dorsomedial view rounded apically (Fig. 3); paraproct in lateral view with ventral branch subequal to or shorter than dorsal branch, extending a little beyond tip of cercus (Fig. 9); no ventral black on abdominal segments 9-10; pale coloration violaceous (southern Arizona, western New Mexico, through Mexico and Guatemala) or blue (central New Mexico through western Texas, Oklahoma north to South Dakota) . . . . . ***plana***

Other morphological characters separating males of ***A. carlcooki*** from ***extranea*** are (contrasting character states for ***extranea*** in parentheses): genital lobe straight or gently convex (prominent and angulate in ***extranea***), and the medial tooth of cercus robust and mesally curved (Fig. 5) (small, forming a broad cone, Fig. 4). In the field, males of ***carlcooki*** always have a forked humeral stripe of varying degrees (not forked in ***extranea***) and the subbasal streaks on abdominal segments 2-6 are long (shorter in ***extranea***).

Females of ***A. carlcooki*** will key to couplet 6(5') (Postquadrangular cells in forewing 3, in hindwing 2 or 3) leading to Key F-4, and, from there, to ***immunda***. The following modification of that key will allow for the recognition of ***carlcooki***:

2(1'). Larger species (hindwing 22-24 mm); abdominal segments 8-9 pale; mesostigmal plate without prominent mesostigmal lobe, this area a smoothly curved costate ridge (Fig. 10); eastern United States west to California, south through Mexico . . . . . ***immunda*** (in part)

2'. Intermediate sized species (hindwing 20-22 mm); abdominal segments 8-9 pale; mesostigmal plate with posterior margin forming a slightly elevated rim at medial half (Fig. 11); extreme southeastern Arizona through Michoacán and Oaxaca States, Mexico . . . . ***carlcooki***

2". Smaller species (hindwing 16-21 mm); abdominal segments 8-9 with some black; posterior margin of mesostigmal plate with slightly convexly angulate lobes
. . .3

Female ***A. carlcooki*** are morphologically similar to ***immunda*** and care should be taken when identifying them. The mesal margin of the mesostigmal plate in ***carlcooki*** is raised and clearly differentiated from its distal half. In ***immunda***, the entire hind margin forms a low, costate ridge. The posterior margin of the mesostigmal plate of ***extranea*** is produced into a distinct, mesally directed elevated lobe. Thus, in ***carlcooki***, this structure is intermediate, slightly elevated and thickened in its inner half though barely lobed. Females are also blue but much paler than the males. Both ***carlcooki*** and ***immunda*** have a small concave depression just posterior to the medial area of the mesostigmal plate so that the medial half of the mesostigmal plate will appear to be raised. The color pattern of female ***carlcooki*** often resembles the males', or the sub-basal and apical maculation on abdominal segments 2-6 may appear as interrupted dorso-lateral and ventro-lateral streaks. On abdominal segment 7 these streaks are usually entire (Photo 7). Additional photos of ***carlcooki*** have been added to the Internet at: http://members.cox.net/naturewideimages/Argia_carlcooki_photos.html

Although the color pattern of ***Argia carlcooki*** is variable, it is less so than other sympatric Argia species (e.g. ***funcki, tezpi, translata*** and ***lacrimans***). We believe the individuals photographed by Behrstock in Arizona conform to color and pattern expressed by ***carlcooki*** and occurred close to known localities for this species in Sonora. We suggest that ***Argia carlcooki*** be accepted as a valid record for the United States.

ACKNOWLEDGMENTS

We are especially indebted to Rosser Garrison for providing new illustrations and updated dichotomous keys separating ***carlcooki*** from other North American Argia. Bill Mauffray and the late Minter Westfall, Jr. shared I.O.R.I. specimen records and/or information concerning San Bernardino NWR. The Refuge staff of San Bernardino NWR provided courtesies to Behrstock, Upson, and Danforth during visits from 1998 to the present. Cark Cook, Jerrell Daigle, Sid Dunkle, and Rosser Garrison provided helpful comments on the photos that initiated this investigation. Dennis Paulson criticized a draft of this manuscript, and provided helpful cautionary notes and thoughts concerning the range, identification, and naming of certain Argia. Behrstock thanks Jerrell Daigle, Steve Krotzer, and Bill Mauffray, all able and energetic traveling companions.

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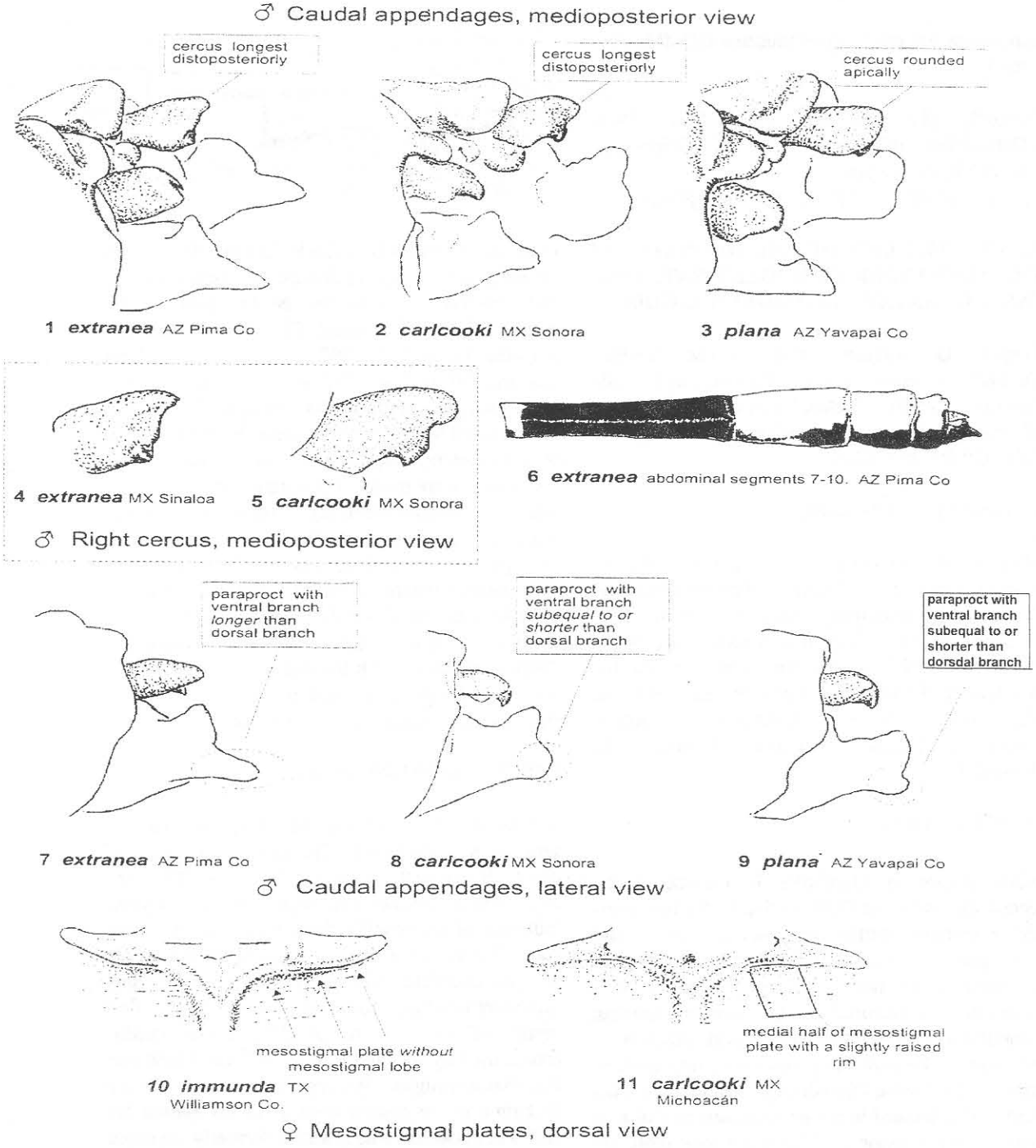

Structural details of **Argia carlcooki, plana**, and ***extranea*** (males) and ***Argia carlcooki*** and ***immunda*** (females) (R. Garrison)

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ANNOTATED LIST OF THE ODONATES IN THE ALEXANDER HUMBOLDT NATIONAL PARK, GUANTANAMO PROVINCE, CUBA

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translated by **Nick Donnelly**

Abstract: We present a list of 24 species collected in seven localities in Alexander Humboldt National Park., and accompany this list with field observations on ecology and habitat. We report ***Protoneura viridis*** as new for Cuba, and also the first record of ***Lestes spumarius*** for eastern Cuba.
Key words: Odonata, Anisoptera, Zygoptera, Dragonfly, Damselfly, Cuba, Alejandro de Humboldt.

INTRODUCTION

Baron Alexander Humboldt is considered the second discoverer of Cuba, owing to his numerous and important studies on natural history and geography. This important man of science marveled at its natural riches: "Cuba; it is a continent in miniature." To this eminent German naturalist is dedicated the national park which bears his name. The park is composed of four sectors: Baracoa, La Melba, Ojito de Agua, and Cupeyal del Norte. It is located in the extreme east of Cuba, in Guantanamo Province. Within the park there are marine, fresh water, and terrestrial ecosystems. The altitude varies from sea level to 1175 meters. It contains about 60 percent endemic plants and animals. For its natural richness, it has achieved the status of a Worldwide Heritage site.

Insects, the most abundant of the animal kingdom, cannot be overlooked. Charismatic dragonflies, or "Caballitos" as they are known, are found in all

localities: Ceremonia (altitude 720 m; 701 by 195 meters); Ojito de Agua (altitude 730 meters; 695 by 197 meters); Cupeyal del Norte (altitude 685 meters; 685 by 200 meters); Cayo Verraco (altitude 320 meters; 675 by 302 meters), Santa María (altitude 90 meters; 722 by 209 meters); Río Macaguanigua (altitude 100 meters; 720 x 212 meters), and Monte Iberia (altitude 580 meters; 720 by 203 meters) respectively. Aerial and aquatic collections were made. Temperature was measured along with relative humidity. The collection in the museum "Charles Ramsden", in the Dept. of Biology of the Universidad de Oriente, was consulted for determination of specimens. We also used keys by Needham & Westfall (1955); Alayo (1969); Wright & Peterson (1994); and Westfall & Tennessen (1996). All the material is deposited in the entomological collection of the Dept. of Biology in the Universidad de Oriente.

RESULTS AND DISCUSSION

A total of 105 specimens of 24 species and six families were collected. The number of species if about 29 per cent for the total for Cuba (Trapero and Naranjo, 2003). This high fraction is a good indicator of the specific diversity in this inportant zone. The presence of 86 per cent of the families is also an excellent indicator of the health of this important montane ecosystem. We present the first report of the capture of ***Protoneura viridis***, represented by four individuals in Santa María and Río Macaguanigua. We report the capture for the first time in the eastern zone of ***Lestes spumarius*** and ***Pachydiplax longipennis***, formerly reported only for western Cuba (Alayo, 1968).

ANNOTATED LIST OF ODONATA PRESENT IN THE ALEXANDER HUMBOLDT NATIONAL PARK

Zygoptera; Lestidae

Lestes spumarius Hagen *in Selys*, 1862

Six adult and larval examples of this species were observed and collected only in Monte Iberia, at the shores of the second lagoon of this sector, at 580 meters elevation. Males were seen perched on plant stems close to the shore. Between 12:00 and 12:25 six pairs were present. There were also examples with teneral coloration, and with weak flight. This species has been reported previously in the western part of Cuba, in the Guanahacabibes peninsula, Pinar del Río (Alayo, 1968), where the altitude does not surpass 30 meters. This is the first report from the east.

Megapodagrionidae

Hypolestes trinitatis (Gundlach, 1888)

This enigmatic megapodagrionid, the only representative of the family in our area, was collected and observed as four larvae and six adults in the following localities: Ceremonia, Ojito de Agua, Cuyeyal del Norte along the shores of the Río Angostura, and Cayo Verraco. It always flew very close to the water, perching on dry branches above the flow of the river. The females were always seen far from the water in vegetation along paths, and only in copula on the Río Angostura between 11:43 and 11:50 AM. Larvae were collected in backwaters 30 – 40 cm deep, where the water temperature fluctuated between 20° and 30°C. We also observed a larvae in the ultimate stage in the Río Angostura. at 12:22, when the larvae had crawled on to a rock about 15 cm above the water.

Protoneuridae

Protoneura capillaris (Rambur, 1842)

This species, together with the former species, is typical of mountain torrents and can be often observed in copulation between 11:20 AM and 1:30 PM. We collected seven adults and five larvae, the adults flying slowly between branches of the shoreline vegetation, the males perching at the tips of sun-lit leaves, exhibiting large blue spots on the 7th and 8th segments, or in tandem with females ovipositing in stems, fallen leaves, or woody tissue at water level. The larvae are found in very shallow pools which are covered with abundant vegetation, in the Ríos Ceremonia, Santa María, and Macaguanigua.

Protoneura viridis Westfall, 1964

The four specimens of this species were all adult males, flying, or perching in the shade, in branches of shoreline bushes which hang in the current of the Ríos Santa María and Macaguanigua, and in some cases flying close to the water surface in backwaters. They were always seen between 11:00 AM and 12:00 PM. This species has only been reported for Jamaica, Hispaniola, Puerto Rico, and the Virgin Islands (Westfall, 1964). This is its first occurrence in Cuba.

Coenagrionidae

Enallagma coecum (Hagen, 1861)

This species is quite scarce in Cuba. It is easy to detect by the dusky spot on segments eight and nine of the abdomen and the dusky sides of the thorax. We observed six adults perching on branches very close to the river. Along with ***Macrothemis celeno*** it is one of the first dragonflies to be noticed by collectors. We found it in Santa María, Río Macaguanigua, and Monte Iberia, this last at 580 meters elevation.

Ischnura ramburii (Selys, 1850).

A male was observed very close to a pond in Cayo Verraco which was filled by the rain during the wet season. It was perched on stems illuminated by the last rays of the sun at 5:00 PM.

Telebasis dominicana (Selys,1857).

As with ***Enallagma coecum***, we found this species in Monte Iberia. We saw a male flying slowly in the herbaceous vegetation along the shores of a pond at 11:30 AM.

Anisoptera; Aeshnidae

Aeshna psilus Calvert, 1947.

A larvae of this species in a pond on Monte Iberia (elevation 580 meters) established its presence in the park. The water temperature was 21°C. This is the third Cuban record; the first was by Alayo (1968) for Gran Piedra, and the second by Trapero and Naranjo (2002) for Pico Cristal Park, Holgúin.

Anax junius (Drury, 1770)

An individual was observed flying repeatedly on a pond and entering the forest around it in Monte Iberia, always more than 4 meters above the ground, between 11:40 AM and 12"05 PM.

Libellulidae

Dythemis rufinervis (Burmeister, 1839)

We observed two males of this species in a pasture near Río Santa María, perched on the tips of bare branches in the sun, at 4:05 PM.

Erythemis vesiculosa (Fabricius., 1775)

We observed three examples perched on vegetation along the edges of a path at Cupeyal del Norte. They showed brownish bands with rings of pale yellow on the abdomen.

Erythrodiplax umbrata (Linnaeus, 1758)

We collected nine adult and three larval specimens. The adults all had dark bands on the wings and a dark color. They were always perched in sunny openings. We also observed forms with a greenish olive color, and with nearly imperceptible bands on the wings, in places among tall vegetation near the rivers, exposed to the sun's rays. Larvae were collected in a shallow, muddy pond, on the path to Río Macaguanigua , Baracoa sector. The adults were found at Cupeyal del Norte and Santa María in the Baracoa sector.

Macrodiplax balteata (Hagen,1861)

We observed an adult of this species at Cupeyal del Norte, perched in the afternoon at the point of a bare branch of Marabú (*Dichrostachys cinerea*) near the ecological station in this portion of the park. It is the second report for Guantanamo Province; Ayalo (1968) previously collected it at Yacabo

Macrothemis celeno (Selys, 1857)

This is one of the most common Cuban species. Its blue eyes, dark body with green stripes, and transparent wings make it easily identifiable. It is seen flying tirelessly along the swift current of rivers. Females perch on rocks and vegetation, in sunny places. We took a total of 14 specimens, always after the very early hours of the day, being most active between about 8:30 and 8:45 AM. It was taken or observed at Cupeyal del Norte, Cayo Verraco, and Santa María.

Miathyria marcella (Selys, 1857)

This is a species found commonly flying above shallow ponds and perching exposed to the sun on leaves or branches of bushes and grass. We observed a male at 12:10PM, in Santa María, noting the yellow color of the abdomen and the dark basal spots of the hind wings.

Micrathyria aequalis (Hagen, 1861)

We found an adult of this species at 11:26 AM, flying at a low height among the branches of bushes, along a path at Cupeyal del Norte station.

Micrathyria didyma (Selys, 1857)

An adult was observed perched in a bush in a pond which develops into the Río Castro, near the hut at Cayo Verraco in the Cupeyal del Norte sector, at 3:30 PM, in the rain.

Orthemis ferruginea (Fabricius, 1775)

This species is one of the most abundant and widely distributed odonates in Cuba. We collected seven specimens, four adults and three larvae. Larvae were collected in a shallow, muddy pond in Santa María, and along the path towards the Río Macaguanigua, Baracoa sector. The adults were taken in Cupeyal del Norte, flying among the bushy vegetation around the ecological station, above a very shallow arroyo which joins the Río Castro, near the workers' house in Cayo Verraco. The red color of the abdomen and thorax in mature males is unmistakable; also the dark maroon of the females, and with long, dark brown pterostigmata.

Pachydiplax longipennis (Burmeister, 1839)

Two larval individuals were collected in a shallow, muddy pond, on the path at Santa María. At this locality the predominant vegetation is bushy, permitting total sun on the pond. This is the second report of this species for the eastern sector. Alayo (1968) only reported it from the west. In the report of Odonata deposited in the Institute of Ecology and Systematics, Reyes and Alvarez (2001)

apparently collected in "Yacabo", in Guantanamo Province.

Pantala flavescens (Fabricius, 1798)

This species, along with ***Orthemis ferruginea***, is counted as among the most abundant in Cuba, in the view of Cuban collectors. We observed five individuals flying close to the Río Santa María, in the Baracoa sector, at mid day, approaching the river and then flying away toward the surrounding vegetation.

Perithemis domitia (Drury,1773)

This is the smallest libellulid in Cuba. An adult was observed perching on a branch very near the water of the Río Macaguanigua, exposed to the sun with its amber wings open, between 11:30 AM and 12:20 PM. A larva was also collected in a shallow muddy pond, very close to the place where the adult was observed, in Baracoa sector.

Scapanea frontalis (Burmeister, 1839)

We observed and collected eight adults of both sexes of this Antillean endemic. Females are commonly collected on perches among the vegetation between 2:00 and 4:30 PM, some distance from the river; also they can be seen flying above the current of the river, and along paths far from bodies of water. This is one of the few montane species which breeds in clean, cold water. Localities where it was seen and collected are Cupeyal del Norte, Cayo Verraco, Ojito de Agua, and Santa María.

Tramea abdominalis (Rambur, 1842)

Only one individual of this species was collected in Cupeyal del Norte, and one in Monte Iberia, two places at elevations 670, and 580 meters respectively, although it is considered a characteristic coastal species. In both localities it was observed flying among the bushes and/ or perching on very high branches between 11:50 AM and 12:30 PM.

Tramea onusta Hagen, 1861

This coastal species was collected flying about three to four meters high near the Río Santa María, in a completely clear pasture with solitary plants, so that there were no perches. It is easy to identify in flight because of its large basal patch in the hind wing. It could be confused with ***Tramea lacerata*** which has very similar wing markings, and is only differentiated by coloration. We observed the captured specimen at 1:35 PM.

Acknowledgements

We give sincere thanks to Beatriz Lauranzon, Angel Reyes, and Rolando Teruel, investigators of the Centro Oriental de Ecosistemas y Biodiversidad, for furnishing us with geographic information on the Alexander Humboldt National Park; and for assistance in the preparation of this manuscript

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DRAGONFLY LAMPSHADES BY LOUIS COMFORT TIFFANY

Martha Wren Briggs, Art Librarian Emeritus, C.W. Post College of L.I.U.

Illustrations by Robyn Bellospirito

Just where Louis Comfort Tiffany (1848-1933), master of the stained-glass medium, and the leading proponent in the United States of the Art Nouveau movement, got the idea for a dragonfly motif lampshade is not known; but, all things found in nature, especially plants and insects, pleased and delighted him.

Tiffany was familiar with live dragonflies. They are still seen in the swampy area of Long Island, where as a young man Tiffany spent his summers, and where, in 1905, he laid out and planted his vast 550 acre estate gardens with ponds and running water.

The earliest leaded stained-glass lampshades made by Tiffany Studios were for kerosene lamps. The third lampshade produced by Tiffany for these lamps had a dragonfly motif. Dragonflies were a logical choice for a stained-glass lampshade. Shown in downward flight, their long, slender bodies formed natural separations for the repetitive design in a shade, while their outstretched iridescent glass wings filled the space at the bottom of a shade no matter what its size.

Tiffany approved all projects created by his studio. Uncharacteristically, he gave full credit for the development of the dragonfly lampshade to one of his most capable female designers, Clara Driscoll. Mrs. Driscoll won a prize for her dragonfly design at the 1900 Paris Exhibition. Five years later, while still designing for Tiffany, she was one of the highest paid women in the United States, earning over ten thousand dollars a year.

The public was introduced to lamps and stained-glass lampshades made by Tiffany's Lamp Shop in Corona, near New York City in 1896. The shop's products were viewed by Tiffany as a business venture, for the shades gave him a way to utilize small pieces of colored decorative glass that had been left over from his stained-glass window production. He also hoped that these lamps, which he electrified in 1899 at Thomas Edison's suggestion, would reverse the financial losses suffered when churches' needs for stained-glass windows had been satiated, and were no longer popular for new church buildings.

The character of the glass that Tiffany developed for his windows, and eventually used in his lampshades, was unique. By adding chemicals, gases or vapors to molten glass while it was still "in the pot," he developed a color-saturated glass which, whether plain, mottled, or textured, was

effective when seen from either side. Thus his lampshades appeared as works of art whether the lamp's light was on or off.

The method used in constructing Tiffany's stained-glass lampshades was similar to that used for stained-glass windows. A design was made by one of Tiffany's staff, and submitted for his approval. Next a watercolor cartoon was done of the design. Cartoons for dragonfly shades were flat, almost full circular patterns that gave the shade its shape when the sides were joined together. After thick dark lines showing the locations of the leads were added, a metal or wooden template was made to indicate the placement of the individual colored glass shapes.

Each Tiffany lampshade was a custom-made item. A glass-crafter, usually a female, was at liberty to select the shade's entire color scheme and could spend a week or more choosing and cutting each colored glass piece by hand to match the design of the cartoon. Some shades were made that were named correctly after Odonata, such as "The Red-Bodied," "The Blue-Bodied," or "The Green Dragonfly." But there is no indication that Tiffany, Clara Driscoll, or any of the shade-makers were familiar with the authentic coloring of any individual species of Odonata, since other shades are incorrectly called the "Purple-Winged Dragonfly," the "Green-Gold Dragonfly," or the "Mauve-Winged Dragonfly."

Cone shaped dragonfly lamps had a paper tag saying "Tiffany Studios, New York," and were numbered, but the shades were never signed. When globe shaped shades were signed, Tiffany's mark was inscribed inside at either the top or bottom of the metal rim.

On a given Tiffany shade, the same colored dragonflies are always shown at rest, with wings open, facing the base. The shade's size determines the number of insect repeats. Both the 16" and the 20" shades, have seven dragonflies repeated around their lower edges. On the smaller 16" shade, the wings of one insect overlap the lower wings of the insect next to it, giving the shade a three-dimensional effect. In the lower space of a 20" shade, the dragonfly's wing tips slightly overlap those of its neighbor. To effectively fill the rim space on the larger 22" shades, nine identical dragonflies were positioned side-by-side around the lower rim with their wings just touching.

Tiffany developed an undulating glass for his windows that worked perfectly for dragonfly wings. By slowly pushing a sheet of cooling glass from both ends, he created a slightly rippled, or wavy textured glass which simulated the veins in the insect's wings. The wavy glass defused the strong glare of the lamp's electric bulb, and blended the insects' bodies with the background colors of the shade. In some instances there are shades where the veins are further enhanced by the addition of an open metal filigree design.

A glass formation called a glob was used by Tiffany in a majority of his lamps for the eyes of the dragonflies as well as for the shade's background decoration. Globs form when selected sizes of glass lumps are allowed to melt. As they cool, they become flat underneath and round on the surface. Like glass jewels globs do reflect and transmit light, and lend texture to an otherwise flat area, but they are not faceted In the 22" shade, where the dragonflies' heads hang below the shade's rim, the eyes are made of flat glass. Perhaps this was done to distinguish the insect's eyes from the colored globs in the shade's background.

Between 1899 and 1913, Tiffany Lamp Studios produced several hundred stained-glass lampshades, all considered luxury goods. They were priced from 30 to 750 dollars. Tiffany's hopes that the lampshade venture would reverse his business losses were fulfilled, but he did not mention any of his lampshades in his 1914 book, "The Art Works of Louis C. Tiffany". Since shades were mass produced, perhaps Tiffany omitted them because he did not consider lampshades artistically equal to his famous stained-glass windows. Fortunately for posterity, Tiffany & Company, which sold items from Tiffany Studios, compiled a photographic album of Tiffany's lamps. The firm's 1915 "Blue Book" catalogue recommended bases for different lampshades. Dragonfly shades were suggested for nature-inspired bases, such as lily stems, or geometric shaped bases, such as urns.

In the early part of the twenty-first century, all stained-glass dragonfly lampshades made by Tiffany Studios are prized collectors' items. Tiffany is now remembered as much for his magnificent stained-glass dragonfly lampshades as for his impressive and unique stained-glass windows.

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NEW RECORD FOR *ARGIA CUPREA* AND *LESTES SECULA* - RESULTS OF THE 2003 COLLECTING TRIP TO NICARAGUA

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Thirty nine species were found during a collecting trip in Nicaragua, from 17.09 to 09.10.2003. We list them below as a contribution to Odonata fauna of this country. These specimens are deposited in the National History Museum of Nantes, under numbers MHNN.Z.0046473 to 046476, as part of our reference collection. Two species seems to be new for this country; ***Argia cuprea***, known, in middle America, from Mexico, Guatemala, Belize, Honduras, Costa Rica and Panama (Paulson, 2004), and ***Lestes secula***, known only for Panama (May, 1992).

Casarès - Rio La Flor, small forest stream, 2 Oct. 2003: ***Lestes secula*** 1 female, ***L. tenuatus*** 1 male, ***Orthemis levis*** 1 male, ***Erythemis haematogastra*** 1 male

Refugio de Vida Silvestre Los Gatuzos, Río Zapote, near Costa Rican boundary, 5 Oct. 2003: ***Argia cuprea*** 1 male, ***A. popoluca*** 1 male, ***A. tezpi*** 1 male, ***Leptobasis vacillans*** 2 males, 1 female, ***Telebasis digiticollis*** 1 male, ***T. filiola*** 1 male, ***Uracis imbuta*** 10 males females, ***Dythemis velox*** 1 male, ***Erythemis attala*** 1 female, 2 males, ***E. peruviana*** 4 males, ***E. vesiculosa*** 2 males, ***Micrathyria*** sp. 1 female, ***M. laevigata*** 1 male, ***Orthemis ferruginea*** 1 male, ***Erythrodiplax fervida*** numerous on the banks

Miraflor, San Rafael del, Jinoteca dept. Natural Reserve, 200 m alt, 24 Sept. 2003 (stream): ***Hetaerina titia*** 4 males, ***H. cruentata*** 1 male, ***Achilestes grandis*** 2 males, ***Orthemis*** sp. 1 male, ***Cannaphila vibex*** 1 male, On the road, ***Anisagrion allopterum*** 2 males, ***Argia extranea*** 1 male

Lago de Nicaragua, Archipelago de Solentiname, Isla Mancarron, 4 Oct. 2003: ***Argia extranea*** 1 male

La Flor, pacific coast, north to El Ostional, Rivas dept, 20 Sept. 2003: ***Argia translata*** 8 males females, ***Ischnura ramburii*** 2 males, Vegetation on the beach, ***Triacanthagyna trifida*** 1 male, ***Macrothemis inacuta*** 2 males, 1 female, ***Tholymis citrina*** 1 male, ***Gynacantha mexicana*** 1 male, ***Miathyria marcella*** 3 males

On the road between San Juan del Sur and El Ostonial, 21 21 Sept. 2003: ***Erythemis vesiculosa*** 1 male, ***Erythrodiplax umbrata*** 1 male, ***E. funerea*** 4 males, ***Pseudoleon superbus*** 1 male

San Carlos, Lago de Nicaragua, Rio San Juan Dept. lawn of the airport, 4 Oct. 2003: ***Miathyria marcella*** 7 males and females

Jinotepe, small temporary pond on trail to Jinotepe 28 Sept. .2003: ***Perithemis mooma*** 1 male, this species was numerous near on the trail, ***Paltothemis lineatipes*** 2 males

Laguna de Apoyo, Masaya Dept. caldera, 01.10.2003: ***Argia chelata*** 1 male

We wish to thanks Jean-Michel Maes (León) for his kindness and for the collecting and transport authorization.

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OCCIPITAL SPINES ON MALE *OPHIOGOMPHUS MORRISONI*

Tim Manolis

Females of many species in the genus ***Ophiogomphus*** have occipital or postoccipital spines. Paulson (1998) summarized the distribution and variation of these features in North American species of the genus, with a particular focus on the unusual case of ***Ophiogomphus morrisoni***.

In ***O. morrisoni*** females may either be spineless or have well-developed spines, and "both continuous variation and discrete polymorphism in different populations" were reported in northern California by Paulson (1998), who felt that regional variation in the presence of spines in that species might represent an example of reproductive character displacement in an area where the ranges of ***O. morrisoni*** and ***O. severus***, which is apparently consistently spineless, overlap.

During a number of visits to northeastern California in 2003, I searched for populations of ***Ophiogomphus*** species in hopes of shedding a bit more light on this hypothesis. While I failed to find any sites where ***O. morrisoni*** and ***O. severus*** occurred in sympatry, I did encounter another puzzling twist in the story.

On 12 July 2003 I collected three males of ***O. morrisoni*** along Ash Creek at the Ash Creek Campground, Lassen County, about 6.5 miles ESE of Adin, Modoc County. The species was fairly common, with 15-20 males seen along a short stretch of the creek. An attempt to find females away from the creek was unsuccessful. Other gomphids flying along the creek at that time were ***Octogomphus specularis*** (abundant, easily 40-50 seen) and ***Gomphus kurilis*** (2-3 seen).

After returning home and fixing the specimens in acetone, I was surprised to note that one of the three males had distinct occipital spines. I had never seen spines on this species before, so only had the description of females' spines in Paulson (1998) for comparison. My initial impression was that the spines on the male seemed to match Paulson's description. I have since found a female ***O. morrisoni*** with well-developed spines in the Bohart Museum, University of California, Davis (collected on 20 July 1997 at Willow Creek along the Merrillville Road, 3 miles E of Eagle Lake, Lassen County, by L. A. Baptiste).

Since, to my knowledge, the occipital spines of this species have not been figured elsewhere, I here show sketches of the occiputs of both the Willow Creek female and the spiny male from Ash Creek (Fig. 1). For comparison, sketches of ***O. morrisoni*** lacking occipital spines may be seen in Kennedy (1917) and Needham et al. (2000). The spines of the Willow Creek female are larger than those of the Ash Creek male, with distinct, single black points. The slightly smaller spines of the male have more ragged tips. The spine on one side (right) is distinctly forked, with two distinct (and a third, extremely minute and barely visible in this sketch) black tips. The spine on the other (left) side appears to have but one distinct black-tipped point except under high magnification, when another very minute point is visible on the distal anterior margin of the spine. Paulson (1998) describes one female as having one forked-tipped spine.

Of the other two males collected at Ash Creek, one is spineless; but the other has small, black-tipped bumps along the dorsal ridge of the occiput, at the site where spines are found on spiny individuals. These bumps are so small that they are barely visible to the naked eye. The Ash Creek site, then, appears to represent a second location where ***O. morrisoni*** exhibits continuous variation in this character, the other being "four miles east of the Eagle Lake Field Station" (Paulson 1998), about 43 miles south of Ash Creek Campground. The former location would appear to fall very close to, if not exactly on, the Merrillville Road at Willow Creek, the location of the Bohart Museum specimen figured here. D. Paulson (in litt.) confirmed that the female I illustrate here is typical of those with the largest spines he examined on female ***O. morrisoni***.

I have been unable to find any literature reference to occipital spines on male ***Ophiogomphus***. S. Dunkle (in litt.) reported finding some male ***O. acuminatus*** with occipital spines. Perhaps the phenomenon is of wider occurrence but seldom looked for. I would be very interested to hear of other such instances. In any event, the presence of occipital spines on males raises a question -- do these spines have an adaptive function, and if so, what?

References:

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Paulson, D. R. 1998. Variation in head spines in female ***Ophiogomphus***, with a possible example of reproductive character displacement (Anisoptera: Gomphidae). Bulletin of American Odonatology 5(3): 55-58.

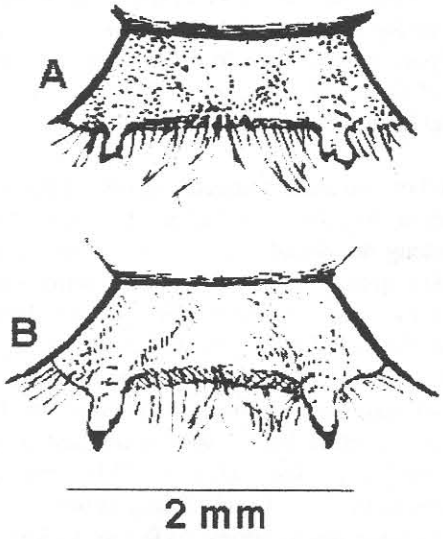

Figure 1. Occiputs of ***Ophiogomphus morrisoni***: (A) male from Ash Creek Campground, Lassen County, CA; (B) female from Willow Creek at Merrillville Road, Lassen County, CA. The spines project dorsoposteriorly (towards bottom of the sketch in this view).

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AN UNUSUAL MODE OF CONTRACEPTION

Mark O'Brien

Last year, Stephen Ross sent a big batch of voucher specimens from his work in the UP in Gogebic County for the Forest Service. In that lot of specimens were many good records, and one that really made me laugh. One unfortunate male ***Gomphus quadricolor*** was collected by Stephen with the terminal abdominal segments of a female still attached to the the male's penis. I suppose that had the male lived beyond Stephen's capture, he may have been able to disengage himself, but in this instance, he was removed from the gene pool *a priori*. I have often seen female ***Argia*** with male abdominal segments still clasping as though the male were mate-guarding, but of course, the head and thorax of the male missing -- probably in the stomach of some avian predator or dragonfly. These females would presumably be prevented from mating again unless the lifeless male abdomen were to fall off. In this case of the ***Gomphus quadricolor***, it is the first time I have seen such a predicament on a male.

The collection information of the specimen is as follows-- MICHIGAN: Gogebic County, Tenderfoot Creek upstream about 1/4 mi from CR 527 bridge, over stream, 46¡16.542N x 89¡31.552W, July 12, 2003, Stephen Ross, MOS0029328

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FIRST STATE RECORD OF *GOMPHUS MILITARIS* IN LOUISIANA

Kreg D. Ellzey, 3416 Gum Springs Loop, Hornbeck, LA 71439

According to Mauffray (1997), ***Gomphus militaris*** (Russet-tipped Clubtail) has never been documented in Louisiana despite its recorded occurrence in adjacent Marion County, Texas (Harwell, 1951)--a northeast Texas county that borders a portion of the western side of Caddo Parish, Louisiana. On 18 May 2004, I collected a single male specimen of ***Gomphus militaris*** at Red River Education and Research Park (RRERP) in Shreveport, Caddo Parish, Louisiana. The specimen was subsequently sent to Bill Mauffray at IORI and verified as ***G. militaris*** (2004), confirming it as a first state record for Louisiana. RRERP is owned by LSU-Shreveport as part of the Red River Watershed Institute (RRWI). I would like to publicly thank Dr. Gary Hanson, director of the RRWI, for granting me permission to collect at this location. The specimen will be deposited at the LSU collection of Arthropods in Baton Rouge, Louisiana.

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Mauffray, Bill. 1997. The Dragonflies and Damselflies of Louisiana. Bull. of Am. Odonatology 5(1):1-26.

Mauffray, Bill. 2004. Personal Communication.
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"BLUE MOUNTAINS GREENIES BUG $130M FILM", By Sophie Tedmanson, Louise Milligan and Jesse Scott, April 30, 2004

(from the web; News.com.au)

The filming of a multi-million-dollar Hollywood blockbuster in the Blue Mountains has been stopped partly because of fears over the fate of the larvae of a giant native dragonfly.

NSW Premier Bob Carr was preparing last night an urgent appeal against the Land and Environment Court decision, which has brought shooting to a halt on the the $130 million feature film Stealth, and threatens the multi-billion-dollar industry.

Mr Carr said he would work with film company AFG Talons Productions to follow "every legal avenue" to appeal because the judgment sent "the worst possible message for overseas film-makers".

"NSW is in the midst of negotiations with two other major film projects and does not want to put those jobs at risk. The decision puts a $4 billion-a-year industry at risk and threatens 50,000 jobs in the NSW film and television industry," Mr Carr said.

The producers of the military action movie said they were disappointed by the decision, which they said would hurt Australia's film-friendly reputation.

[the bug is evidently ***Petalura gigantea***, ed.]
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***ERYTHRODIPLAX BERENICE* (DRURY, 1770), AND *TRAMEA CALVERTI* MUTTKOWSKI, 1910, NEW SPECIES FOR GUADELOUPE (LESSER ANTILLES)**

François Meurgey, Museum d'Histoire Naturelle, 12, rue Voltaire 44000 NANTES

While reviewing Eastern Caribbean Odonata collection (former INRA Duclos collection, Guadeloupe), owned by the Société Française d'Odonatologie, an anisopteran that had never been determined, turned out to be a female of ***Erythrodiplax berenice*** (Drury, 1770), with the following data: Guadeloupe, Le Moule, 10 Dec. 1973.

E. Berenice is known to be specific to salt waters (mangrove swamps, brackish waters, salt lakes). This species occurs in nearctic and neotropical regions (recorded from Canada to Venezuela), and from the Greater Antilles, where it was listed from Trinidad and Tobago (Tsuda, 1991 - A distributional list of world Odonata, Osaka, 362p). During the 2004 prospecting campaign, we visited the site (at Le Moule) and, despite intensive searches, we were unable to find it.

During the survey of a small pond in Basse-Terre (Guadeloupe), a male ***Tramea calverti*** was collected, on 31 Mar. 2004 at Anse Bésia (commune of Ste Rose). This species shows a wide Neotropical distribution; from Mexico to Brazil, including the Caribbean Islands.

This male showed a strong territorial behaviour by chasing away from its territory a female ***Tramea binotata***, which tried to lay its eggs in the mud of the banks. This seems to be the first record of ***Tramea calverti*** for the Lesser Antilles.
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ORIGINAL MEMBERS OF DSA

Jerrell J. Daigle
<Jdaigle@nettally.com>

At the 2003 California DSA meeting, the question was asked who were the original members of DSA, formerly the American Dragonfly Society? We now have the answer. The first organizational meeting was held Friday evening, 11 August, in the Luntsford Apartments lobby at East Tennessee State University during the 1989 SIO International Meeting in Johnson City, Tennessee. After a presentation by Frank Carle (attended by 30 or so people), 19 people stayed behind for the organizational meeting. They joined the society and participated in the officer elections. They are as follows: Rob Cannings, Syd Cannings, Frank Carle, Tim Cashatt, Carl Cook, Duncan Cuyler,

Jerrell J. Daigle, Nick Donnelly, Sid Dunkle, Rosser Garrison, Enrique Gonzalez, George Harp, Dan Johnson (our hard-working host), Rodolfo Novelo, Clark Shiffer, Ken Tennessen, Dennis Paulson, Steve Valley, and Tim Vogt. For more information on this historic event, please see **ARGIA** 1:1-4 and SELYSIA 18:2, and revisit this blast from the past!

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OPERATION RUBYSPOT 2004

Dave Small

The Massachusetts Natural Heritage and Endangered Species Program through the Athol Bird and Nature Club will be conducting a Statewide Survey of American Rubyspots, ***Hetaerina americana,*** this summer. American Rubyspots are watch-listed in Mass, and a survey is needed to help better understand the status of this easily recognized species. To help locate populations of ***Hetaerina*** around the state we are asking anyone observing these beautiful damselflies to report locations to <dhs@rubyspto.net> or call 978-413-1772.

Rubyspots' flight period in Central New England is generally August and September. The plan is for survey teams to follow up on reports of Rubyspots observed to determine the extent of the populations found. We also invite sighting reports from neighboring states to help look at the population of Central New England. Sighting information requested includes: Date, Town/county, River name and nearest cross street, plus information on number and sex of Rubyspots observed. For more information check the website <http://www.miolersriver.net>. Thanks in advance for reports and happy hunting.

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Review: DAMSELFLIES OF THE NORTHEAST. By **Ed Lam**. Biodiversity Books, P.O. Box 353, Eastchester NY 10709. Price $20 plus #2 for postage and handling.

reviewed by **Nick Donnelly**

At last – a guide which really works! With a book that is as attractive as it is informative, Ed Lam has produced a guide that has clearly (based on e-mail chat) enabled beginners – and not a few "experts" also all over the east and midwest to identify damselflies quickly and accurately. The range of the book is stated to be The "Northeast, from Canada to Virginia". Yet, according to my quick tally, a person located in Tennessee would find all their damselflies here, and a person in Iowa would miss only the rare ***Coenagrion angulatum*** and ***Enallagma clausum***. This is book that will work for people located far from the northeast.

There is a fine introductory section with clear explanations of life history, anatomy, and methods for identifications. The three families are "keyed out", but otherwise keys are not used in the book. One could object to the fact that the genera of coenagrionids are not keyed in the conventional sense, but Lam's presentation is sufficiently clear for even a beginner to home in quickly to the correct genus. Difficult species, such as the ***Lestes disjunctus*** – ***australis*** – ***forcipatus*** complex, receive deeper treatment, and the interesting intergradational complex of ***Enallagma cyathigerum*** and ***vernale*** is treated as subspecies (for which I must accept blame); but the collector of these interesting insects will be sufficiently warned of the problems, as well as the opportunities for further study, that they present.

The illustrations are beautiful as they are accurate. In the often-vexing ***Ischnura***, multiple figures show several life stage colorations of the females.

This is an absolutely lovely book, and it is modestly priced. It deserves to be in the library of anyone in the eastern half of the US or Canada.

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Review: **COMMON DRAGONFLIES OF THE SOUTHWEST**, By Kathy Biggs. Azalea Creek Publishing, 308 Bloomfield Rd, Sebastopol CA 95472. $10.95, (contact the publisher at azalea@sonic.net)

reviewed by **Rich Bailowitz,** 1331 W. Emeine Drive, Tucson, AZ 85704

Kathy Biggs has done it again. She has managed to pack an enormous amount of dragonfly information into an extremely compact format. This time the topic is the better-known dragonflies of the Southwest, a follow-up to her first guide in the Beginner's Pocket Guide series entitled "Common Dragonflies of California". The paperback is all of 4 ½" by 5 3/4 " but has 160 pages with a full

component of color photographs taken by 43 contributing natural history photographers.

While claiming to be just a beginner's guide, it is well suited to the serious amateur as well. It begins with a one page Table of Contents and a Preface which explains that the book is for "....people who are interested in watching, documenting and photographing the Southwest's interesting species." Next follows a "How to Use This Book" section, a page on "Viewing Dragonflies", a short discussion on the "Life of the Dragonfly" and finally the species accounts section. These short pre-sections and the post-sections including a Glossary, Bibliography and References, an Index, a state-by-state checklist, a Frequently Asked Questions page, and finally a list of Websites and Discussion Groups are all surprisingly compact and effective. In fact, it is precisely this compactness that allows this book to be successful. That two color photos, a size discussion, a description of the male, the female, the habitat, the flight period, and the states of distribution can all be squeezed onto a single page of these dimensions would be remarkable were it not for the truncated but concise wordage used by Ms. Biggs.

Another reason for its success as a new publication is that it covers an area which is heretofore comparative virgin territory. Up-to-date state publications in book format do not exist for five of the six states included in this book, the lone exception being California.

Errors in the book are kept to a minimum (e.g., mixing up the scientific and common names of the ***Argia agrioides / nahuana*** group), a few of the photos are blurry (e.g. Olive clubtail) and the choices of what is truly "common" and worthy of inclusion will always be debated, but these small faults are more than overridden by many excellent touches. The family and genus write-ups before each portion of the species accounts are well done and very much worth reading. The entire Aeshnid section is beautifully done, and of course Rosser Garrison's line drawings for male appendages of ***Argia*** and ***Enallagma*** are a necessary treat.

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Review: **Ontario Odonata. Volume 4. 2004**. Edited and compiled by Paul M. Catling, Colin D. Jones, and Paul Pratt. Toronto Entomologists' Association. (To purchase copies contact Publication Dept.: Alan J. Hanks, 34 Seaton Drive, Aurora ON L4G 2K1 Canada (905-727-6993) alan.hanks@sympatico.ca)

reviewed by **Nick Donnelly**

This publication continues the excellent annual reports on a variety of Odonata topics, mainly including distribution, but also including diverse topics such as overwintering of ***Anax*** larvae; recovery of Odonata in a dried-up pond; dragonflies and water quality. There have been several expansions of ranges in Ontario, including ***Hetaerina titia***, ***Cordulegaster obliqua***, several ***Somatochlora***, and ***Archilestes grandis*** (new to Canada).

The bulk of the book (149 pages!) is a print-out of a spread sheet with more than 6700 records. It is doubtful that any user of the book will transcribe any of this information.

This is a very interesting book and gives a good account of a flourishing community of Odonata students in Canada's major province.

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IT CAN BE TOUGH BEING A DRAGONFLY: JAPAN ODONATIST'S WEB SITE ON EGG-PARASITOIDS OF DRAGONFLIES

reviewed by **Roy Beckemeyer**

Philip Corbet devoted several pages (63-66) and a table (A.3.7, p. 603) in his Dragonflies: Behavior and ecology of Odonata (Cornell Univ. Press, 1999) to egg parasitoids of Odonata, listing species of parasitoids and their host odonates, and including a line drawing of a trichogrammatid wasp that is a parsitoid of ***Ischnura verticalis***.

The wasps that lay their eggs in odonate eggs are in the suborder Apocrita, mostly in superfamily Chalcidoidea (the Chalcid wasps). They are very tiny insects, not much bigger than the eggs into which they lay their own eggs, and are not often seen or recognized.

One of the great advantages of the internet is the ease with which color photos can be presented, as compared with books, where the color plates are prohibitively expensive. Thus when I came across Syosuke Shimura's fantastic web site on Dragonfly Egg Parasitoids, I was amazed. He has color pictures of the odonates, their eggs, with and

without wasp pupae in them, and in most cases, photos of the wasps themselves. This really brings this esoteric subject to life!

He also covers exotic dragonflies that are of much interest in themselves. The odonate taxa included are: ***Lestes sponsa, L. japonica, L. temporalis, Cercion c. calamorum, Epiophlebia superstes, Aeshna nigroflava, Anax parthenope julius, Deielia phaon***, and ***Copera annulata***. The wasps are strange looking creatures, usually with wings that are fringed and sometimes little more than stalks with hairs on them. Mr. Shimura's microphotographs are first rate, and represent some painstaking effort. He must really love his work. Look up his web site and enjoy the images and insight into Odonata biology they provide at: <http://homepage1.nifty.com/shoshimu/ENGPA2.htm>.

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ACETONE IN A BOTTLE?

Jerrell J. Daigle
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Tired of splashing and spilling precious acetone from those rectangular metal containers you get from the hardware stores and paint shops? Fingers hurting from those impossibl-to-open lids? Can't find a screwdriver handy to pry it open?

Now, you can easily pour acetone from the new twist top metal bottle from KLEAN-STRIP. The quart container is turquoise with a black and white checkered racing flag in the upper right hand corner. It is over 8 inches tall and about 3 inches in diameter. The label says acetone is used as a fiberglass resin thinner, and it is 100% pure. Also, you could pour acetone from another can into this bottle and reuse it.

You can get the KLEAN-STRIP acetone bottles at any auto parts store such as Advanced Discount Auto Parts, Auto Zone, Pep Boys, and in the automotive paint section of Wal-Mart SuperCenter. It costs about $4.00 but it is cheaper in Wal-Mart.

This is a major improvement over past containers and much welcomed. The next time you are at an auto parts store or Wal-Mart, pick up a bottle and check it out!

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TRAMEA

From Kathy Biggs:

Dragonflies (Odonata) of the Southwest: http://southwestdragonflies.net/ showcases the Dragons and damsels of the greater southwest, including CA, NV, UT, CO, AZ, & NM.

From Brian Bockhahn:

I created a Dragonfly Game for Environmental Educators. Still need to load an activity map to the site, but the rest is there.
http://bwwells.org/dragongame

ARGIA

Binghamton, New York Vol. 16, No.3, 5 Aug. 2004

Photo 1: ***Argia carlcooki***, tandem pair; San Bernardino NWR, Cochise County, AZ., 8-IX-98 (RAB)

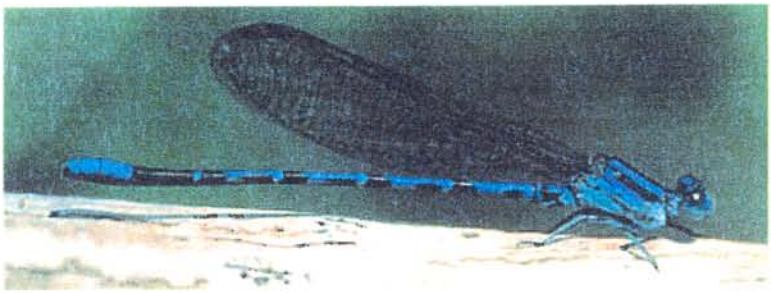
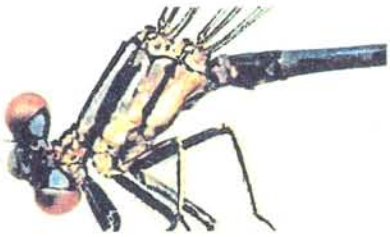


Photo 2: ***Argia carlcooki***, male; Arroyo Tepoca, Yecora *mun*, 2-IX-02 (D. Danforth)



Photos 3 (left) and 4: ***Argia carlcooki***; males, detail of pigmentation; Rancho Agua Caliente, San Pedro de la Cueva *mun*, 16-III-03; and Arroyo Tepoca, Yecora *mun*, 17-VIII-03 (S. Upson scans)

Photo 5: ***Argia carlcooki***; male; Rio Matape at San Jose de Pimas, la Colorada *mun*, 2-VI-03 (S. Upson)

Photo 6: ***Argia extranea***, male; Agua Caliente, Aconchi *mun*, 6-III-02 (D. Danforth)

Photo 7: ***Argia carlcooki***, female; 8 km NW of Hwy 12 at Rio Yaqui, Sahuaripa *mun*, 13-III-04 (S. Upson)