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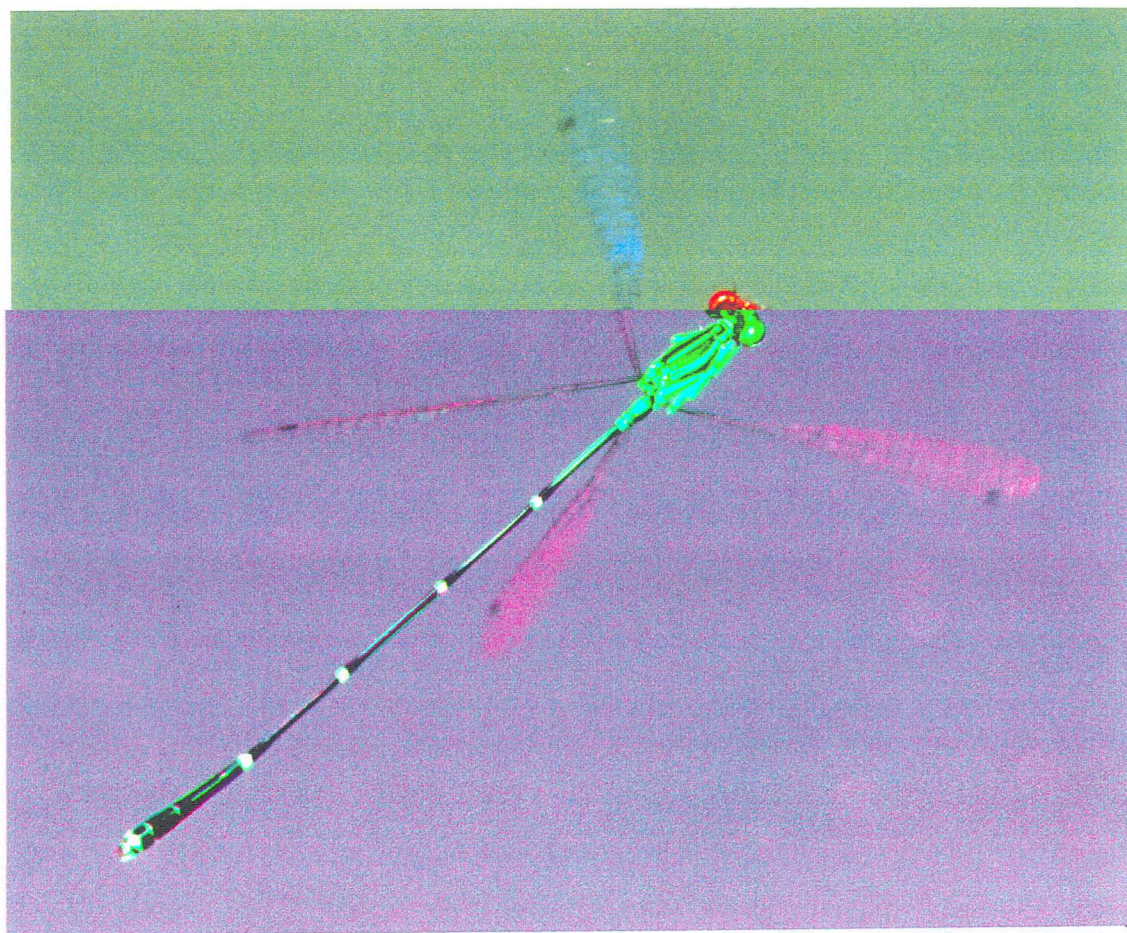
ARGIA

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THE DRAGONFLY SOCIETY OF THE AMERICAS

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

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

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

MEMBERSHIP IN THE DRAGONFLY SOCIETY OF THE AMERICAS

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

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

Cover: *Protoneura cara*, Devils River TX. Flight photo showing the fore and hind wings operating independently. Photo by Roy Beckemeyer

out for jewelry, plates, lamps, and (read on) tattoos? We could make a fortune . . .

The Japanese have always been especially keen on Dragonflies. Now they are using dozens of dragonfly ponds as a teaching tool for conservation biology in Japan, as Dennis Paulson reports.

I review several books in this issue, including the absolutely stunning new guide to Indiana Anisoptera by Jim Curry. And I finish up with an item from the Quad Cities Times showing that dragonflies are attracting attention in the heart of the Mid West. But, tattoos?

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The 2001 DSA ANNUAL MEETING AT JUNCTION, TEXAS

John Abbott

The 2001 Annual Meeting of the Dragonfly Society of the Americas (DSA) was held on the 13th through the 15th of July in Junction, Texas. Post-meeting activities included a trip to the Nature Conservancy's Dolan Falls Ranch in west-central Texas and Bitter Lake National Wildlife Refuge and surrounding areas near Roswell, New Mexico.

This was the first DSA meeting in Texas and it was made largely possible by the willingness of David Riskind and the Texas Parks and Wildlife Department to let the group collect on their lands. The official gathering area was the Comfort Inn located on the outskirts of Junction. Ryan Caesar and myself drove into the parking lot of the hotel on Thursday afternoon where there were already signs of dragonflies in the vicinity. I noticed an entire parking spot covered with wet clothes from someone's earlier outing. I also noticed the display of dragonfly books in a window that I knew had to belong to Bill Mauffray.

The meeting started out with the prize catch. A number of folks were gathered in the parking lot of the Comfort Inn when Fred Sibley showed me a dragonfly he had collected at the nearby South Llano River State Park where he was staying. He said he "had a common pond dragonfly" he wanted me to identify. To my surprise, what he showed me I had never seen before. I didn't know what it was except that it hadn't previously been found in Texas. Both Dennis Paulson and Sid Dunkle determined it was in fact *Erythemis peruviana*, a new U.S. record. Way to go Fred! That evening everyone congregated at the Come-N-Git-It restaurant in town for dinner and storytelling.

On Friday morning (July 13th) everyone met in the Comfort Inn Parking lot to break into groups for the day's collecting. The skies were clear, and it

seemed everyone was primed for a great day of collecting. Over the next two and half days a pretty formidable list of Odonata were either seen or collected in the Junction area. Detailed county lists are still in preparation (thanks to many of you who sent me your collecting records), but I can list the following 64 species that were taken in the Junction area: *Calopteryx maculata*, *Hetaerina americana*, *H. titia*, *Neoneura aaroni*, *Protoneura cara*, *Argia apicalis*, *A. barretti*, *A. cuprea*, *A. fumipennis violacea*, *A. hinei*, *A. immunda*, *A. leonorae*, *A. moesta*, *A. nahuana*, *A. plana*, *A. sedula*, *A. translata*, *Enallagma basidens*, *E. civile*, *E. exsulans*, *E. novaehispaniae*, *E. praevarum*, *Ischnura hastata*, *I. posita*, *I. ramburii*, *Telebasis salva*, *Anax junius*, *Dromogomphus spinosus*, *D. spoliatus*, *Erpetogomphus designatus*, *Gomphus militaris*, *Hagenius brevistylus*, *Phyllogomphoides albrighti*, *P. stigmatus*, *Macromia annulata*, *M. pacifica*, *Epithea princeps*, *Neurocordulia xanthosoma*, *Brechmorhoga mendax*, *Celithemis eponina*, *C. fasciata*, *Dythemis fugax*, *D. nigrescens*, *D. velox*, *Erythemis peruviana*, *E. simplicicollis*, *Erythrodiplax fusca*, *E. umbrata*, *Libellula commanche*, *L. incesta*, *L. luctuosa*, *L. saturata*, *Macrodiplax balteata*, *Orthemis ferruginea*, *Pachydiplax longipennis*, *Pantala flavescens*, *P. hymenaea*, *Perithemis tenera*, *Plathemis lydia*, *Pseudoleon superbus*, *Sympetrum vicinum*, *Tramea lucerata*, and *T. onusta*.

Collecting spots included the South Llano River State Park and various access points and tributaries of the South and North Llano Rivers, the Frio River at Garner State Park and near the town of Leakey, the Sabinal River at Lost Maples State Natural Area, the San Saba River at Ft. McKavett State Historical Park and various road crossings nearby, the Nueces River near Barksdale, Chalk Bluff Park north of Uvalde, and the Guadalupe River near Hunt. Pre-trip collecting also occurred at Blanco and Guadalupe River State Parks.

Post-meeting collecting included a trip to the Nature Conservancy's Dolan Falls Ranch at the junction of the Devils River and Dolan Creek. This beautiful spot was admired by all who attended this part of the meeting. In addition to species collected at the Junction portion of the meeting, *Argia plana*, *Brachymesia furcata*, *B. grvida*, *Libellula croceipennis*, *Macrothemis imitans*, *Micrathyria hagenii*, *Sympetrum corruptum* and *Tramea insularis* were all taken. We also found relatively large populations of goodies like *Argia leonorae*, *Protoneura cara*, *Macromia annulata* and *Pseudoleon superbus*.

Several people, including Dennis Paulson, Molly Hukari, Blair Nikula, Jeremiah Trimble, and David and Joanna Nunnalee, visited Fort Clark Springs at Brackettville to find a tropical paradise waiting.



The group at Junction. Photo by Blair Nikula

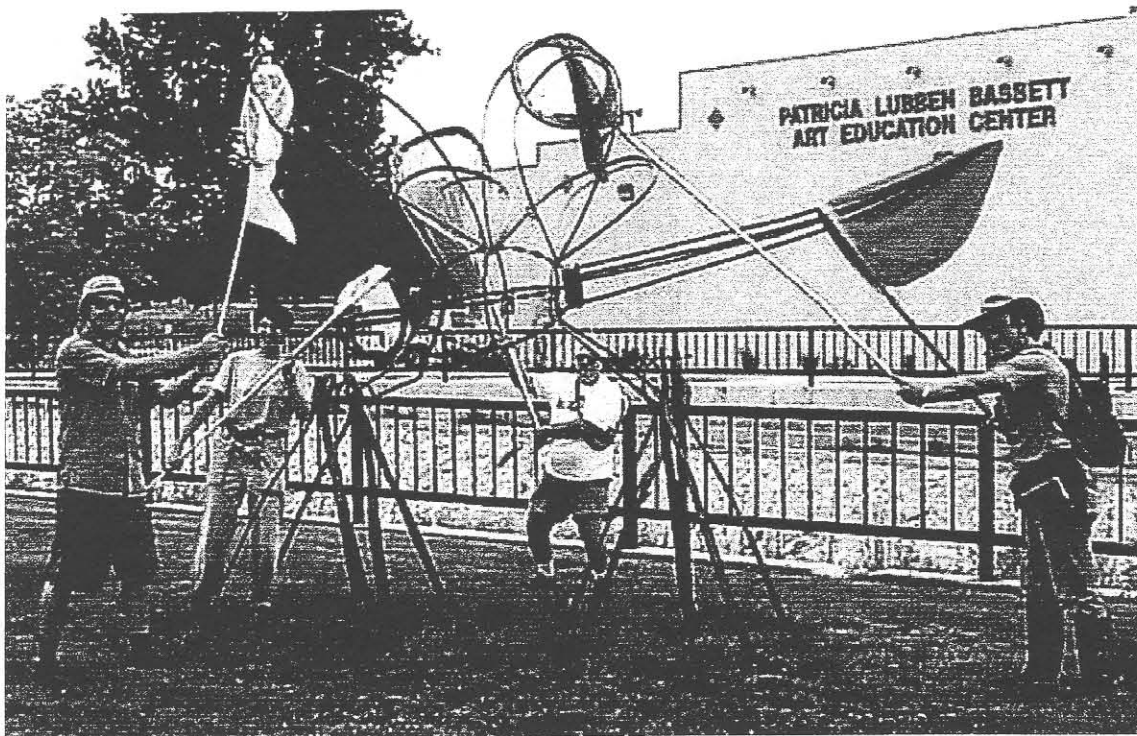
The group found a number of notable species there, including *Argia rhoadsi*, *Brachymesia furcata*, *Cannaphila insularis*, *Erythemis vesiculosa*, *Libellula croceipennis*, *Macrothemis imitans* and *Tramea insularis*. Upon hearing of this great locality myself, Roy Beckemeyer, Ruth Buskirk, Ryan Caesar, Tim Cashatt, Jerrell Daigle, Nick Donnelly and Sid Dunkle decided to visit there before heading to New Mexico. In addition to some of the species noted above, Jerrell found *Aphylla angustifolia* and *Stylurus plagiatu*s at this site.

A group including myself, Roy Beckemeyer, Ryan Caesar, Jerrell Daigle, Nick and Ailsa Donnelly, Sid Dunkle and George and Phoebe Harp continued on to Roswell, New Mexico where we met up with Robert Larsen, Karen Gaines and Gordon Warrick at the Bitter Lake National Wildlife Refuge. Our three hosts for this part of the meeting took us to a number of localities in and around Roswell, in addition to Bitter Lake. We found species including *Argia alberta*, *Ischnura barberi*, *I. damula*, *I. demorsa* and *I. denticollis*, *Aeshna multicolor*, *Erpetogomphus designatus*, *Gomphus militaris*, *Erythemis collocata*, *Erythrodiplax berenice*, *Macrodiplax balteata* and *Plathemis subornata*. But the highlight of this portion of the meeting was the large populations of *Libellula composita* we found at several localities. While in Roswell we did come across a giant dragonfly [see next article] and of course being the good odonatologists that we are, every attempt was made to bag it! Before leaving New Mexico, myself, Jerrell, Karen, Roy, Ryan and Sid stopped by Sitting Bull Falls. As we arrived, we noticed the

clouds building, but we pressed on. It wasn't long before we all found ourselves huddled together under a picnic table shelter as the rain and hail came down in force. This was not before we managed to find *Argia fumipennis violacea*, *A. hinei*, *A. plana*, *Hesperagrion heterodoxum*, *Aeshna dugesi*, *Anax walsinghami*, *Erythemis collocata*, *Libellula comanche*, and *L. saturata* among others.

If I have added correctly, a total of 76 species were seen or collected during the Texas portion of the meeting including a new national record. An additional 14 species were seen or collected during the New Mexico portion of the meeting. I would ask any of you who have not sent me your records to please do so. I am still compiling records for the report I will submit to the various agencies as part of their permit stipulations. I would like to thank the various state and federal agencies along with the Nature Conservancy for giving us permission to collect on their lands. Without their kindness and cooperation we would not have had the successful meeting we did. A collection of voucher specimens will be deposited at both the University of Texas and Texas A&M Insect collections as the state park permit stipulates. If anyone would like to donate material for this purpose, please let me know.

We also had two evening meetings which both started by sampling the local cuisine; first, Mexican food at La Familia Restaurant and then typical Texas fare at Cooper's Bar-B-Q. Both evening meetings were held in the First United Methodist Annex. Friday evening was an informal gathering that included debating the dragonfly species on the



Ryan Caesar, Karen Gaines, George Harp, and Sid Dunkle try their luck

official meeting pin; there was some controversy over whether we were looking at *Libellula croceipennis* or *Orthemis ferruginea*. We were also treated to wonderful slides of Brazilian Odonata by Rosser Garrison and Venezuelan Odonata by Dennis Paulson. Tom Schultz gave a very interesting talk on "The conspicuousness of male damselfly colorations as visual signals in relation to ambient light, visual backgrounds, and phylogeny," and Roy Beckemeyer shared a poster and a number of insect fossils from the Permian deposits of Kansas and Oklahoma. On Saturday evening, we had the official DSA meeting that you can read more about in Sid Dunkle's write-up. Nick Donnelly also discussed some taxonomic problems in *Cordulegaster*, *Epitheca* and *Orthemis* and Roy Beckemeyer showed some amazing footage of Odonata in flight he had taken.

This was a very successful annual meeting that added considerably to the knowledge of the Odonata fauna in the Texas Hill Country. It was great to see old friends and meet new ones. I look forward to seeing everyone next year in West Virginia.

SCIENTISTS FIND UFO (UNIDENTIFIED FLYING ODONATA) IN ROSWELL, NEW MEXICO

Roy Beckemeyer

Roswell, NM, has been known since the 1950's as home to strange lights in the sky, dark hangars on deserted runways (thought to be filled with the contents of crashed flying saucers), and other mysterious objects. It was also one of the sites for post-meeting collecting trips after this summer's annual DSA meeting.

The collecting there was even better than anticipated. Thanks to the ever alert DSA collecting crews, we now have photographic proof of the existence of UFO's. The picture below shows the DSA team in action: Ryan (Muldar) Caesar, Karen (Scully) Gaines, George (G-man) Harp, and Sid (two-net) Dunkle are shown capturing a huge UFOdonate in front of the Art Museum in Roswell.

Word has it that, now that the specimen has been processed, there is a shortage of acetone in the southwestern US. The specimen is rumored to be stored in Hangar 51, filed under "X".

ONTARIO HOSTS THE FIRST GREAT LAKES ODONATA MEETING

by Colin D. Jones

From July 3-6, 2001, Ontario's Natural Heritage Information Centre (<http://www.mnr.gov.on.ca/mnr/nhic/nhic.html>) hosted the first Great Lakes Odonata Meeting. Twenty-five Odonata enthusiasts

from three states (Ohio, Michigan and Wisconsin) and one province (Ontario) met at Laurentian Lodge in the beautiful Algoma District of Ontario for what will hopefully become an annual event. The location was chosen for a number of reasons. It was relatively central as far as the Great Lakes Basin is concerned, the area had received little coverage in the past, and there was a lot of potential for interesting species of dragonflies and damselflies.

The area lies approximately 150 km east of Sault Ste. Marie, about 25km north of the town of Elliot Lake, and is situated in the transition zone between the Great Lakes Forest Zone and the Boreal Forest Zone. As such, there are both southern and northern elements represented in the flora and fauna. The area surrounding the lodge is largely undeveloped and is a mixture of actively harvested forest, and protected areas, including Mississagi Provincial Park and a number of newly created protected areas. As far as the Odonata are concerned, there is a great diversity of aquatic habitats, ranging from rivers such as the sandy-bottomed Boland and the gravelly-bottomed Little White, to wetlands such as the vast Stag Lake Peatland, to numerous lakes and beaver ponds. The high hills of the area, combined with the vast forest and beautiful flowing rivers, were scenically stunning and were a definite highlight of the trip.

Day one of the meeting was largely meant as a travel day. Our first official event was a welcome and introduction to the meeting followed by an informal "wine-and-cheese" during which we had the opportunity to meet other ode enthusiasts from neighboring jurisdictions.

Following breakfast on day two, the weather was looking grim so we decided to have our first scheduled speaker, Mark O'Brien present his material on the Michigan Odonata Survey (MOS) in the morning, hoping that the weather would improve later in the day. Mark's very informative talk provided an overview of Michigan's well-organized state-wide survey. The survey is a volunteer-based effort and Mark is the coordinator of the project and the webmaster for the MOS website (<http://insects.ummz.lsa.umich.edu/MICHODO/MOS.HTML>), an excellent on-line resource.

As it turned out, we made the right choice to have Mark speak in the morning. By the time Mark had finished his presentation, the rain had ceased and the sun began to peek out from behind dark clouds. In three separate parties, we convoyed north and west from the lodge to the Little White River. An extremely scenic road parallels the river and the three groups "leap-frogged" along the road for the remainder of the day surveying the river for

Odonata. Highlights of the day included *Aeshna eremita* (Lake Darner), *Gomphus adelphus* (Mustached Clubtail), *Ophiogomphus carolus* (Riffle Snaketail), and *Helocordulia uhleri* (Uhler's Sundragon). The most exciting discovery of the day, and the entire trip, was *Ophiogomphus anomalus* (Extra-striped Snaketail). Marianne Clark caught a female of this attractive species along the road running beside the Little White River. In addition, the day before, David Bree had found an individual along the Aux Sables River, near Espanola, Ontario on his way to the meeting. This globally rare species was only previously known from a total of six sites in Ontario.

In the evening of day two, I coordinated a photo "quiz" in order to test our identification skills. A combination of prints and slides were used and the questions ranged from relatively easy and straightforward identifications to those that were quite difficult. The "quiz" was meant to be fun-filled and educational and I think that both objectives were achieved.

Day three was very disappointing as far as the weather was concerned. Temperatures were cool and the sky was overcast with scattered showers. As a result, we were not very successful in finding adult Odonata and our attention turned to searching for exuviae (of which the identity of many has yet to be determined). We began our day with the entire group along the Boland River. After lunch we broke into two groups, one of which slogged into the vast Stag Lake Peatland, while the other travelled the roads northward to survey a variety of wetlands. The Stag Lake Peatland was fantastic and if the weather had been more cooperative we surely would have discovered some interesting species.

In the evening of day three, I presented a brief overview of the coordinated efforts underway in Ontario designed to gain further insight into our Odonata fauna. Specifically, I spoke about the yearly publication by the Toronto Entomologists' Association entitled **ONTARIO ODONATA** - a publication that not only features the year's summary of records, but also various notes, articles, and papers on the Odonata of Ontario, as well as reviews of other publications, and news on the various projects underway in the province. I also spoke about the various recent publications available such as Catling and Brownell's excellent **DAMSELFLIES AND DRAGONFLIES (ODONATA) OF ONTARIO: RESOURCE GUIDE AND ANNOTATED LIST** and of the Atlas of Ontario Odonata project coordinated by the Ontario Natural Heritage Information Centre, Ministry of Natural Resources.

Day three ended with an excellent slide presentation by Jay Cossey, a professional

Although most people left immediately after breakfast on day four (due to the lengthy drive most had ahead of them), some individuals spent additional time surveying a few more areas since the weather had finally become warm and sunny! By the end of the meeting, we had recorded a total of 49 species (excluding the exuviae), six of which were new for the Algoma District list. I would be happy to supply anyone interested with a full species list. I may be contacted via email at colin.jones@mnr.gov.on.ca or by telephone at 705-655-2166.

Participants list for the 2001 Great Lakes Odonata Meeting:

Wisconsin: Bob Dubois

Michigan: Adrienne O'Brien, Marjorie O'Brien,
Mark O'Brien

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Jerrell J. Daigle, Jdaigle@nettally.com

We were able to add 12 new species to the GSMNP inventory list. They are as follows: *Cordulegaster erronea*, *Boyeria grafiana*, *Somatochlora linearis*, *S. tenebrosa*, *Stylogomphus albistylus* (larvae), *Stylurus scudderi*? (larvae), *Libellula luctuosa*, *Pantala flavescens*, *Sympetrum ambiguum*, *S. rubicundulum*, *S. vicinum*, and *Lestes forcipatus*. Carl Cook found a stream full of *Lanthus vernalis* larvae in a field of wildflowers that had the fabulous and rare Diana butterfly flitting about.

At the evening meetings, Ken and Steve put on a fantastic slide show of the DSA Texas trip and wary Texas dragonflies. It was enough to make you want to go back next year. Also, Ken showed slides of exotic dragonflies from his Bolivia trips. As part of our permit conditions, we are putting together a voucher collection of dragonflies for the park.

Official business included proposing 6 potential future SE regional meeting sites. We accepted the 2002 SE Regional meeting Eglin Air Force Base proposal hosted by Theresa Thom, base biologist, and Jerrell J. Daigle.

All in all, we had a great time in this deep green forest filled with deer and at least 2 black bears in the Smokies! If anyone has any questions, please let me know. See you all in NW Florida next year.

Joshua Stuart Rose jsr6@duke.edu

On May 18--20 I took part in the second annual "Dragonfly Days" festival, hosted by the Valley Nature Center (VNC) in Weslaco, TX. Whereas last year I participated as a paying customer, this time the festival organizers invited me back at their own expense to serve as a field trip leader. They put me up at the Alamo Inn, which I highly recommend to anyone who goes down to the LRGV (Lower Rio Grande Valley) for birds, odonates, or other purposes; it's about the closest accommodations there are to Santa Ana NWR (unless you volunteer there), and it's located conveniently midway between Brownsville and the upper valley spots like Salinero, Zapata, Falcon Dam, etc. The owner of the Alamo Inn also happens to be the president of the Valley Nature Center.

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I don't think dragonflies have ever gotten so much press coverage. Both the daily and weekly papers of the LRGV gave us front-page billing! I clipped out and saved them for posterity; I forget the weekly paper's name, but it had a full-page cover photo of a male *Orthemis* in obelisk posture. The McAllen Monitor had a photo of children on a dragonfly walk behind the VNC beside an article on the festivities.

Saturday kicked off with John Abbott speaking about Texas' odonate diversity and biogeographic associations, with emphasis on some of the state's and LRGV's specialties. Paul Miliotis followed with a conservation-oriented talk that covered birds and butterflies as well as odonates, relating these groups to habitat fragmentation and degradation and the environment in general. After that, and lunch at another festival sponsor (Fiesta Tex-Mex), we split into two groups; one visited the Edinburg scenic wetlands, while Paul, Jeff Howland (a USF&WS herpetologist), Ray Bieber and myself led a hike at Santa Ana NWR. Not sure what all they saw at Edinburg; we had somewhat slim pickings at Santa Ana, but were lucky enough to find a male *Micrathyria didyma* (Three-striped Dasher) mysteriously defending a territory over bare mud at the densely shaded upper end of the resaca. I saw a few of these at the same location last summer, but there was water there then! We also enjoyed several of its congeners, *M. hagenii* (Thornbush Dasher), in the sunnier and wetter parts of the resaca, and were escorted down the trail by *Erythemis vesiculosa* (Great Pondhawk) on several occasions. Our only clubtail of the festival turned up in the butterfly garden and inspired a spirited debate: Paul was absolutely certain it was an

The final day started with James Lasswell of Texas A&M discussing odonates in folklore, with examples from China, Japan, and certain native American cultures. Then Carrie Cate expanded our focus a bit by giving a talk on spiders and their diversity. After a second visit to the Blue Onion, we discovered that the Mercedes Tract of the Lower Rio Grande Valley National Wildlife Refuge, our intended destination, was too wet to drive into; so we instead drove down to the Olmito Fish Hatchery. The spotlight was almost stolen here by beetles, as Ken King spotted a few unbelievably big click beetles and a large, brilliant green longhorn beetle up in the trees (I have photos of these, if any festival participants want scans or copies). However, after much tromping around in the pondsie grass, Bob Behrstock finally spotted the *Neoerythromma cultellatum* (Caribbean Yellowface) we all expected and hoped for, and everyone got good looks.

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Jennifer Wykle (jwykle@mail.dnr.state.wv.us)

The meeting will be held in Lewisburg, WV from June 21-23. Lewisburg is located in the mountains of southern West Virginia along the banks of the Greenbrier River, the longest undammed river in the eastern United States. It is along interstate 64 and is approximately 100 miles from Charleston's Yeager Airport (with international flights but connections to almost all U. S. airports) and Roanoke, VA. It is four hours from Dulles International airport in DC. There is also a small airport in Lewisburg with many connecting flights. The group will gather on Thursday June 20 and

collect in the field both Friday and Saturday. On Sunday June 23, we will be leaving for the post-meeting trip to Canaan Valley/Dolly Sods area. We will have meetings on Friday and Saturday evenings at our main congregation point, the Brier Inn.

ACCOMMODATIONS

The Brier Inn (304-645-7722) is located off I-64 in Lewisburg. The rate right now is \$49.00 + tax for a single room and \$54.00 for a double room but they might be able to give us a better deal as time gets closer so tell them you are with the Dragonfly Society of the Americas. Other hotels and motels nearby are listed below.

Days Inn-(304) 645-2345
Econo Lodge Fort Savannah Motel-(304) 645-3055
Country Inn and Suites-(304) 252-5100
Embassy Inn-(304) 645-7070
General Lewis Inn-(304) 645-2600
Super 8 Motel-(304) 647-3188
The Greenbrier-1-800-453-4858

For those of you wishing to camp there is Greenbrier State Forest which is about a 10 minute drive from the Brier Inn. Reservations for campgrounds can be made by calling (304) 536-1944. The rates are \$17 per night for sites with electric hookup and \$13 per night for no electric hookup.

ODONATA ACTIVITIES

There are many different sites for collecting Odonata species and all are within an hour's drive. The Greenbrier is an attractive river for a variety of gomphid species. To most people, it the premiere river in West Virginia. Many of the river's cold water tributaries, such as Anthony's Creek, offer additional opportunities. Another special attraction in this area is Cranberry Glades which is an hour's drive from Lewisburg. It is a unique high elevation bog in which little odonate sampling has been conducted. Other attractions include the Meadow River wetlands (the second largest wetland in WV) and areas in Beckley, WV (45 minutes) such as Stephens Lake, Bluestone Lake, and Plum Orchard Lake Wildlife Management Area. There have been species collected in the Beckley area that are quite unique, and this area needs to be sampled further.

Lewisburg is a quaint, old town loaded with antique shops and historic attractions. The Greenbrier is a world famous resort. There are commercial caves, and the Greenbrier Valley is full of many scenic areas for hiking and biking.

POST MEETING FIELD TRIPS (June 23-26)

1. Canaan Valley / Dolly Sods- June 23-26

We will leave Lewisburg to drive (about 3 hours) to the Elkins area on Sunday June 23. There are several lodging options and details will be provided in the next or following issue of ARGIA. June 24-25 will be spent searching Canaan Valley State Park/National Wildlife Refuge or Dolly Sods Wilderness Area. These are both unique, high elevation bogs that are surprisingly boreal for this latitude. It will be really great to compare the species collected at each site. There is also the Monongahela National Forest to explore. Just 45 minutes east of Elkins you cross the continental divide are in a different physiographic province, the Ridge and Valley. There are numerous rivers and streams to choose from, along with the highest point in West Virginia, Spruce Knob (4860 ft) which has a lake and other streams to search along the way.

2. The Ohio River- June 26-28

On Wednesday June 26, we will leave for a 2 1/2 hour drive to Parkersburg, WV. Our best option for lodging is the Best Western. They have a group rate of \$55 + tax for 2 people with \$4 per extra person. Each room has two queen sized beds so you can sleep four in a room for \$63 + tax. Call (304) 485-6551 and tell them you are with the Dragonfly Society of the Americas. There are also campgrounds nearby for those of you wanting to camp. Other lodging options in Parkersburg are:

Blennerhassett Hotel-(304) 422-3131-\$70 per night but free full breakfast
Holiday Inn-(304) 485-6200
Knight's Inn-(304) 420-2420
Ramada Inn-(304) 422-5401

On June 27 and 28, you will have your choice of Ohio River islands to visit. Blennerhassett State Park is one of the largest islands and it is easily accessed by shuttle boat. The other option is to visit one of the islands designated as a National Wildlife Refuge. These will be accessed by boats provided by the Fish and Wildlife Service or WV Division of Natural Resources. Odonates have never been collected on these islands. Another great location is Greenbottom Swamp. Greenbottom is the largest wetland in West Virginia and located on the floodplain of the Ohio.

ODONATA SPECIES OF INTEREST

West Virginia is an undersampled state. Since Paul Harwood's work in the 1950's, 60's, and 70's there have not been extensive surveys for odonates in West Virginia. There is potential for many county



The gang in front of the local political headquarters in Wiwili: Donnelly, Harp, Chamorro, Abbott, Gonzalez, Beckemeyer

adventures and misadventures, and should give you a feel for the flexibility and open-mindedness needed to undertake an exploratory expedition into the wilds of Central America. As in any trip, we all had great fun and look back on the trip with fond memories, although at the time we were occasionally wondering about our sanity and asking ourselves how we got ourselves into this situation.

Ticket prices and/or seat availability led a number of us to travel a day early. I reached Managua first, after a relatively uneventful trip from Dallas through Miami to Nicaragua, about noon on Friday the 27th of July. I went to a conveniently-located hotel a short walk across the street from the Managua airport. In mid-afternoon, the electrical power went out (Californians take note) for a couple of hours, forcing me to move out to the garden for a bottle of Nicaraguan beer. Eventually Enrique González showed up and regaled me with tales of wonderful Neotropical damselflies over dinner and another beer. Communication problems with the hotel staff led us to believe that George Harp and John Abbott had already checked in and gone out into the city for dinner. It turned out that John's plane departed Houston late, and he didn't show up until later that evening. George was supposed to connect from Little Rock into Houston and be on the plane with John, but didn't make the connection.

Breakfast the next day found us still without George, and we were getting worried. Finally, about mid-morning, a very haggard looking, but remarkably well-composed George Harp showed up, sans baggage. George had taken an unscheduled and "scenic" route via Miami, where he had spent the night in the Miami airport. Shortly after George arrived, Jean-Michel arrived at the hotel along with a van and driver from León. Jean-Michel had an extra net, and we figured we could stop so that George could buy some clothes on the way north. George left his luggage receipt with the folks at the hotel so they could retrieve his bag whenever it arrived and hold it for his return. Fortunately, George did have his medicine and a few other essentials in his carry-on bag.

Next, Lourdes Chamorro was dropped off at the hotel by her brother. She was suffering from a virus and was sick, but wanted to come along anyway. In her baggage was a large container of denatured alcohol for storing her caddisfly specimens. We loaded her luggage along with all the rest into the back of the van and headed to the airport to pick up the last of the crew, Nick Donnelly, who was to arrive at noon. Nick arrived on time and with his luggage, so we were able to leave Managua nearly on time.

Somehow Lourdes' alcohol managed to spill out onto her baggage, and the sickly-sweet aroma circulated through the van. This did not help her

stomach problems, and our trip north was occasionally punctuated by stops to let her out to throw up. A few hours of driving brought us to the town of Matagalpa, where George was able to purchase some clothes. After our brief shopping expedition, we forged on north again. The roads were not very well marked, and our destination, the village of Wiwili, was not very big, so we stopped often (especially after dark) to ask for directions. This was left to Lourdes since she was seated by the door (ease of access) with the window open (to lighten the fumes). She thus alternated between quizzing the local folks about how much farther it was to Wiwili or which fork in the road led there, and jumping from the car to be sick. The road was also quite bumpy, narrow, curvy and hilly, so we made our way pretty slowly. It was very dark and we had heard the words "not far" or "15 minutes" so often that "fifteen minutes more" became our phrase for the rest of the trip.

We eventually found Wiwili, met up with Javier and Blas, who had gone ahead to arrange for mules and local guides, and sorted ourselves out into the various rooms for a much-needed night of sleep. Eight-o'clock the next morning found us all "showered" (buckets of water drawn from the hotel storage cistern and poured over yourself by the bowl full) and ready for breakfast. We ate at the same nice little restaurant in Wiwili for every meal we had there, and the food was good and hearty although the menu was a little repetitive, with generous helpings of black beans and rice making up the main course. We were already talking with Jean-Michel about the possibility of coming down from our camp in the mountains early so that we could collect at a greater diversity of sites during our stay. This was a potential problem, since our van was due to return to León and wasn't scheduled back until the day before our return flights to the US, but Jean-Michel thought we might be able to work something out.

After breakfast we traveled by van (about a fifteen minute drive) to Maleconcito, where our mules and mule skinnners were located. Much work and discussion went into loading our abundant bags, boxes, packs and other paraphernalia onto the mules. (Need I add that, with the exception of John, we were mostly a group of dudes who had either never or only seldom been aboard a horse or mule). And here we were, about to head up and down steep, rugged, narrow, winding mountain paths. Finally, we took off, some walking, others riding, headed up Cerro Kilambé! At the first promising stream crossing, Nick disappeared upstream and very shortly was heard to announce that he had found the red-bodied *Heteragrion albifrons*. The genus *Heteragrion* belongs to the family Megapodagrionidae, a group of tropical damselflies that usually perch with their wings

partially spread. The males often have bright spots of color on the face and/or abdomen which seem to play a part in display behaviors. Other damselflies seen along the streams we crossed included *Hetaerina cruentata* and *Argia extranea*.

As we worked our way up the steep hillsides, occasional rain became recurrent downpours, and our cameras and collecting boxes soon went into plastic bags and back packs. As the pack animals had been taken on ahead so camp could be set up, we walked and rode on a trail that became more and more churned up as time went on. Before long, the trail was full of holes mid-calf to knee deep, and was basically slick, sticky clay. Our animals soon became so tired that we had to spend most of the time walking. The combination of trail conditions, altitude (about 4000 to 4500 feet) and, for some of us, too much body weight, made the trek to the camp long, grueling, and exhausting. It was dark by the time that the last of our group (me) literally staggered into camp. I was a sorry sight, with mud up to my thighs, mud on my seat and back from having fallen a couple of times, and mud-splattered on my arms and legs. At least the rain eventually washed a lot of it off. A stream flowing by the edge of our camp provided a way to get most of the rest off.

The camp was pretty well put together by the time we got there, at least as well as could be done in pouring rain. We had hammocks suspended between trees, each hammock covered by a plastic tarp. Other tarps covered our pile of baggage. At the top of the little hill on which we camped was a tarp-covered kitchen area, where a smoky fire indicated supper was being cooked. I can honestly say that I can't remember any time recently when I felt as tired as I did standing there in the rain on Cerro Kilambé. Soon the cook had dinner ready - rice and beans and hot coffee to drink. It really hit the spot.

Another challenge that first night was figuring out how to get into the hammock and sleeping bag without dragging in 10 pounds of mud with you. We had cut palm fronds and spread them under the hammocks to keep the immediate area a bit free of mud, but the paths by which we all got around were already very sticky. I eventually used a wet but fairly clean tee shirt as a towel, sat in the hammock, dropped my muddy shoes and socks onto the ground, put my muddy trousers on top of the shoes, then towed the mud off my legs and feet with the tee shirt. I had put clean, dry socks, underwear and pants into the bottom of the hammock, so I wouldn't have to step out in the mud to get dressed. It didn't take long to get to sleep that night, although I woke up often as each muscle in both legs seemed to take a turn at cramping up at some time during the night.

Morning came with only light rain and clouds (had the Donnelly effect finally taken hold after being absent through the entire Texas DSA meeting?). Everyone except Lourdes appeared to have slept reasonably well in spite of the rain. Unfortunately, her sleeping bag and hammock had been soaked in the spilled alcohol and smelled so bad that she sat on the ground in her poncho awake most of the night. Fortunately, she was the caddisfly collector, so she could catch up on her sleep during the day, then collect by black light in the evening.

By mid-morning, the sky was brightening up, and all the odonatologists headed for the stream. There seemed at first to be little activity, but by the end of the collecting weather (mid-afternoon), a nice assortment of species had been seen, including *Hetaerina capitalis*, *H. cruentata* and *H. sempronia*, *Heteragrion eborationum*, *Brechmorhoga rapax* and *B. pertinax*. John had taken an *Epigomphus westfalli* male, and Javier caught a female of the same species almost simultaneously. A nice find made by Nick was that a species of *Paraphlebia* (another Megapodagrionidae genus) was to be found in some of the seeps and spring-like runs along the creek banks. Most of us eventually took a specimen or two. They were of an undescribed species that had been collected by Nick in Nicaragua in 1974 and that is being described by Enrique. The *Heteragrion eborationum* were very pretty. The males have a white face and a bright yellow tip to the abdomen. I had the opportunity to watch two males flying around one another in circles in a shady spot over a pool below a small cascade on the creek, and all you could see were the white and yellow spots dancing in the air.

Although the collecting weather lasted only a few hours, the collecting was good enough to put us all back into pretty positive moods. We had decided, however, that the diversity of species where we were camped was likely to remain low, and since most of us had no or only limited experience with Central American Odonata, we thought it would be better to get back to Wiwili and to work a larger area. We were also all a little worried about the trip out, given our troubles the first day. Poor Jean-Michel thus had to revise plans and work out a new itinerary with the mule skinnners. The trail was still very wet and slick, so the Nicaraguan guides thought that we would have to take another trail out. They spent a lot of time discussing the best plan of attack over the rest of the day.

Night found us gathered around John's portable generator and mercury vapor light, picking insects off a sheet. There were no odonates, but we found a reasonable assortment of beetles, moths, and caddisflies, among other insects. Lourdes was able to get Trichoptera specimens from John's light as

well as from smaller black light traps that she had set up along the stream, and after catching up on her sleep, getting her sleeping bag aired out, and getting over her virus, was feeling much better.

The next day dawned with a bright sky and what promised to be a perfect collecting day. The plan of departure from the mountain required that we leave reasonably early in the day (none of us wanted to be out after dark, and we were all a bit apprehensive after the tough trip up the mountain), so we carried our nets, but would collect only occasionally as we traveled. To avoid trekking down the mucky trail we had come up, a couple of our guides took off with machetes in hand and cut a new trail. Most of us hiked along with them, but Javier and Blas stayed behind with the mules and loaded up the gear. The mules went down another way, and we met up with them about three hours later. The hiking was much easier going down than it had been coming up. It was still steep, and a little slick in places, but the deep mud was missing. It should be noted that a sturdy net makes a good hiking stick. In many places it was steep enough that I supplemented the net with a second walking stick. Of course, the trip was punctuated with a lot of comments about it being only "fifteen minutes more" to get down off the mountain. The first odonate of the day was a spectacular Pseudostigmatidae: *Megaloprepus caerulatus*. This "hélicoptero" was fluttering along and almost literally flew right over us. Enrique was in front, and he yelled out "*Megaloprepus! Megaloprepus!*" as soon as he saw it. This got everyone's attention. It was really great to see this big, lovely creature flapping its wings with the big black and white blotches at the wing tips. The damselfly flew behind a large tree, and we scattered about looking for it. Almost immediately, it flew out near Enrique, and he netted it quickly. It was a female, and was the first live pseudostigmatid that John and I had seen up close.

Not long after, Enrique got another pseudostigmatid, this one a *Mecistogaster modesta* male. Needless to say, there was much jockeying about to be first in line to get first pick at the damselflies, but no more hélicópteros were seen as we hiked along. Eventually we came to an area that had been cleared for farming, and got to our meeting place where the mules were waiting. This was at a small stream where we collected a number of species, including *Brechmorhoga rapax*, *B. pertinax*, *Uracis imbuta*, and *Hetaerina cruentata*. Nick had taken another female *Megaloprepus caerulatus*, which he graciously gave to me (he had also given me the first *Heteragrion albifrons* he caught on the way up the mountain - THANKS, Nick!). And Blas Hernández, showing his expertise as an odonate wrangler, went charging down the trail on his horse after a big lepid that turned out to

be *Archilestes grandis*. I now have in my collection what I suspect to be one of the few specimens of *A. grandis* ever taken by a collector on horseback.

After several hours of riding we eventually came to a real (gravel) road, and all our gear was unloaded. Those readers who have ridden horses or mules in mountainous country on narrow, steep and winding trails probably know what our legs and seats felt like – in any event, we were stiff and walked a little bow-legged for a while. Jean-Michel and his assistants spent 45 minutes or so negotiating final payments to our wranglers – a process that was interesting even if you didn't understand Spanish (lots of negotiations and body language). We had come down to a different road than the one we came up on, so were not back at the village of Maleconcito. We were thus in the position of having to try for a lift back to town. We found that the road was little traveled, mostly by huge dump trucks that were taking loads of rock and dirt up to a dam site. Jean-Michel flagged one of the trucks and asked about getting them to give us a lift to Wiwili. They agreed to do it, but would not be able to until 6:00 pm, when they got off work. Fortunately, when they did come back for us, there were also a dozen or more construction workers in the back of the truck. A few of them jumped down and helped toss our mountain of gear up to others (the side of the truck was ten feet up). We would have had trouble getting the heavier stuff into the truck on our own. Then we climbed up the sides and back of the truck to get ourselves loaded (also not easy). We had a dusty, bumpy, but welcome ride back to town.

They dropped us off at a little roadside cantina where we bought beer and soft drinks while Jean-Michel went off to rent a pickup truck. One more time we loaded our gear, then the truck drove and we walked the several blocks back to the Hotel. What a muddy, worn-out bunch we were! After showers and clean clothes we went off to get dinner at our little restaurant and relived our adventures – which seemed much more entertaining now that we were back safely.

Our plan for the rest of the trip was to hire a truck for the next day, collect in the vicinity of Wiwili, then take the bus to Selva Negra (about 2/3 of the way back to Managua), and spend a couple of days there collecting. This would make our last day back to Managua shorter so we would have time to repack and clean up for the flight home. The indomitable and ever resourceful Jean-Michel, Javier and Blas (what a great team!) found a truck and struck a deal.

The next day dawned bright and clear. We gathered for breakfast, then grabbed our nets and

cameras and waited for our truck. We had a huge Russian vehicle, open in the back and with a canvas cover and bench seats. We collected at a number of stream crossings as well as a small pond. At every stop, the driver would drop us off, then move the truck to the crest of a hill and shut the motor off. He had to do that because it had no functioning starter, and had to be started by rolling downhill. It worked like a charm – fortunately streams are generally in little valleys, and so there was always a hill somewhere near where we collected. Among the many odonates collected around Wiwili were *Hetaerina occisa*, *H. sempronia*, *Acanthagrion quadratum*, *Argia occulata*, *A. oenea*, *A. ulmeca*, *Ischnura capreola*, *Telebasis salva*, *T. filiola*, *T. isthmica*, *Dythemis sterilis*, *Erythemis mithroides*, *Erythrodiplax funerea*, *E. umbrata*, *Macrothemis inacuta*, *M. pseudimitans*, *Micrathyria hagenii*, *M. ocellata*, *Orthemis discolor*, *O. ferruginea*, and *Tramea abdominalis*. In the afternoon we found a little stream that proved to be really neat. Wading upstream from the road crossing, Nick, Roy, and John found a nice assortment of interesting damselflies that included *Hetaerina miniata*, *H. occisa*, *Heteragrion erythrogastrum*, and *Argia ulmeca*. Then Nick discovered, in a shaded tangle of roots along the stream bank, a *Palemnema*. These slender little damselflies, in the family Platystictidae, perch quietly in dark areas along the stream and are best caught by crawling around and picking them off their perches. Sounds easy, but in this mass of roots and vines, every time someone moved the whole tangle shook and the damselflies would fly off to a new perch. Once perched, they were very difficult to see. By persisting for 45 minutes or so, we each managed to collect several males and females. This was John's and my first experience with this family and genus, and it was really fun learning this new approach to collecting odonates. The species turned out to be *Palemnema nathalia*. On getting back to the truck, we found that the folks who had stayed near the road had seen another *Megaloprepus*, but had not been successful at catching it. We went back to Wiwili to clean up, process specimens and get dinner; our moods much improved after a great day of collecting lots of dragonflies.

Over dinner we discussed the idea of hiring the truck driver to take us on to Selva Negra so we would not have to go by bus. Javier went off to see if he could arrange this (another change in plans), and soon came back with things all set up.

The next morning we ate, took a number of group photos in front of the hotel, loaded our gear onto the truck and climbed aboard. We said goodbye to Javier and Blas, who went off on the bus to León, while Jean-Michel went along with us. We stopped along the way to Selva Negra at several spots to collect. At one, a small stream cascading down a

The next day we packed up our gear, were met by our van driver, who had come in from León, and left for Managua after breakfast. We said our goodbyes to Jean-Michel at the airport, and checked in to our rooms to repack and clean up. Lourdes had offered to take us on a short tour of Managua in the afternoon, so we got to do a bit of

The distribution maps in Dunkle (2000) suggest that there may be over 40 species of anisopterans in Sierra County, but only 14 species have been recorded (Larsen 2000). The creeks, old cattle tanks, wells, and man-made ponds on the Ladder Ranch provide a wide range of habitats for dragonflies, and made it an excellent location for a rapid survey. Upland creeks in the ponderosa pine zone were dominated by mosaic darners, in particular *Optonaeschna armata* (Riffle Darner). I captured two males and a female that patrolled along the banks and defended stretches of streams. I also caught a male *Aeshna palmata* (Paddle-tailed Darner), which is a new record for the county. I sampled two sites in the upper p/j (pinyon/juniper), a metal cattle tank and an earthen tank fed by wells. At the earthen tank I captured two male *Sympetrum corruptum* (Variegated Meadowhawk), one female *Pantala hymenaea* (Spot-winged Glider), a male *Libellula saturata* (Flame Skimmer), and a male *Aeshna dugesi* (Arroyo Darner). The *A. dugesi* is a

new record for Sierra County. At the metal tank I caught a pair of *Pantala flavescens* (Wandering Glider) in wheel, a lone male, a female *P. hymenaea*, and a male *Plathemis lydia* (Common Whitetail). At lower elevations in the p/j zone, *Bechmorhoga mendax* (Pale-faced Clubskimmer) and *Paltothermis lineatipes* (Red Rock Smimmer) were often found together, battling over the same stream run. I collected two male *B. mendax* and three male *P. lineatipes*; this is a new county record for *P. lineatipes*.

The Ladder Ranch also has a healthy population of *Anax walsinghamsi* (Giant Darner). Males and females were common visitors to two other tanks (earthen and metal) at slightly lower elevations where the p/j was limited to the moist canyons cut deep into the desert grassland. I caught a female *A. walsinghamsi* as it was foraging with *Anax junius* (Common Green Darner) and *Tramea lacerata* (Black Saddlebags) at a metal tank. This is a new county record for *A. walsinghamsi*. However, a male eluded me at an earthen tank, and I was forced to satisfy myself by catching a male *Libellula saturata* (Flame Skimmer), male *Aeshna multicolor* (Blue-eyed Darner), and a pair of *Tramea onusta* (Red Saddlebags) in wheel. *Anax junius*, *Tramea lacerata*, and *Libellula luctuosa* (Widow Skimmer) also frequented an impoundment behind the ranch headquarters. I caught a female *A. junius*, female *Libellula luctuosa*, and female *Erpetogomphus designatus* at this pond. These are new county records for *L. luctuosa*, *E. designatus*, and *T. onusta*. So, of the 40 or so anisopteran species with ranges that include Sierra County (Dunkle 2000), I caught representatives of 16 species and saw one more (*T. lacerata*). Of the 16 species caught, seven represent new records for Sierra County: *Aeshna dugesi*, *A. palmata*, *Anax walsinghamsi*, *Erpetogomphus designatus*, *Libellula luctuosa*, *Paltothermis lineatipes*, and *Tramea onusta*.

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MAINE TRIP

e-mail from Dennis Paulson

This is from a week-long visit to Maine (24 June-2 July 2001) by my wife Netta Smith and I, with a brief excursion to Vermont, from which we had to retire because of adverse weather. We were only able to collect for one afternoon in northern Vermont. That state badly needs odonatological visits!

I was impressed by getting two unusual records from Maine simultaneously (literally; I saw both *Libellula needhami* and *Tramea lacerata* the second we arrived at the shore, and both were common there) at Lake Caroline, on the coast in southern York County. Are these species expanding farther up the Atlantic coast? I think that lake would be a great place to look for *Ischnura ramburii* and possibly other southern/coastal species. Another range extension was *Arigomphus villosipes*, common at an artificial pond at Sandy Pond Estates in Androscoggin County; artificial ponds often seem to be places colonized by expanding species. We saw two male *Nasiaeschna pentacantha*, a species only recently documented from the state. We also visited Otter Pond in Cumberland County and found it a fabulous place for damselflies. We found *Enallagma laterale* but couldn't find *E. recurvatum* (Mark McPeck had reported both species there); I finally got tired of catching and releasing *hageni* to check for these less common species, and I found I couldn't be quite sure about seeing the black abdominal mark on *laterale* by peering at perched bluets. We also added *Enallagma aspersum*, *E. geminatum*, and *Ischnura kellicotti* to the county list from collections at that lake and found *E. divagans* common in a little swamp there. Parenthetically, why are lakes called ponds in Maine? I would have thought that would be a Texas convention.

THERE ARE DEFINITELY NO FLYING FISHES ON THE ROAD TO MANDALAY

Nick Donnelly

What one does find on the road to Mandalay are water buffalo, and some of the most beat-up trucks that you have ever seen. Never have Kipling's words been less accurate: Mandalay is in the middle of a vast semi-desert. It is also one of the fastest growing cities in southeast Asia. Perhaps in tribute to its growth, it is one of the few large cities in Myanmar to retain its original name. Even the capital - long known as "Rangoon" - has become "Yangon". Remember the singer that used to be

known as "Prince"? This is the country that used to be known as "Burma".

Ailsa and I have wanted to visit this country for years. Several times, and in several places, we have been on the border of Burma, but we had never been inside. Not able to find a reason for staying away, we contacted a travel agent in Bangkok who had arranged previous trips to Vietnam and Cambodia and outlined what we hoped was a feasible plan. Our agent found us a vehicle, driver, and interpreter (actually three of each, for we had laid out a complex itinerary), and off we went. We invited Malcolm, one of our sons (and a skilled dragonfly collector who likes to come along on off-beat visits to countries with challenging logistics and intriguing cuisine) to accompany us.

It was the start of the rainy season, and the paddy fields reflected the setting sun like a thousand mirrors as we descended to the Yangon airport. Stepping off the plane from Bangkok in Yangon is like stepping back several decades in time. To say that Myanmar is not really ready for tourists is like saying that Louisiana is not really ready for outdoor ice hockey. The country is in the grip of a vast national paranoia; the military is everywhere; and security checks are frequent and thorough.

We did not linger in Yangon but took a plane early the next morning for Bagan, which used to be known as Pagan. This trip was itself amusing, because all the flights left at the same time, and the announcements were in Burmese. Happily, the airlines sorted themselves out by directing little men to circulate among the expectant passengers holding up boarding cards. If the color of your card matched, then you followed your guide.

Bagan is in a desert-like plain with thousands of pagodas, most of which are many hundred years old. It would like to be compared with Angkor Wat, but, although charming, Angkor Wat it is not. It is also not, as you might guess, a promising place for dragonflies, but in a reconstructed portion of the moat surrounding the old city there were many species flying. In addition to finding old friends like *Ceriatagrion indochinense* – a striking yellow-bodied damselfly – we found some species I had not found previously. *Tramea limbata* was flying over the moat. One does not often see this genus in southeast Asia, and we were happy to net one. *Aethriamanta aethra* is a small, dark libellulid not at all like its brilliant red African cousin *A. rezia*. *Pseudagrion spencei* was another species new to me, but the remainder were all old acquaintances, such as the tiny *Agriocnemis pygmaea* (one of the tiniest damselflies in the world), the red *Crocothemis servilia*, and the aptly named *Diplacodes trivialis*.

Pressing on, we moved on to Maymyo, which is an old British Hill Station, named for a Lieutenant May, who may or may not have been instrumental in founding it. This is a locality whose name will ring a bell with old India hands, because it is the type locality for many of Fraser's and Laidlaw's species. Today it is a bustling town housing a military college, which has been moved to the salubrious highlands so that soldiers (of which Myanmar has an abundance) do not have to train in the hot lowlands. There is little original forest accessible around Maymyo, but there is an attractive botanical garden with a large lake, a nearby waterfall where the local people gather for picnics, and a cave a few tens of kilometers away which is also a popular tourist place.

We stayed in a small hotel that was built in hopes that there will someday be a tourist trade. Each evening we asked our guide to take us to a local restaurant in town to sample the local cuisine, which is similar to Thai and Chinese. There are also many Nepalese restaurants because of the large number of Gurkhas that retired in Burma after the World War II. The food is not up to Thai standards, but good none the less.

The waterfall near Maymyo had a short stretch of a small river above it, and, even though it was littered with the ubiquitous food wrappers and plastic bottles we have become accustomed to finding all over southeast Asia, it was attractive. I was delighted to find *Asiagomphus xanthenatus*, a species described by Williamson, who sadly never saw it in life. It is a lovely stocky black and yellow gomphid similar to (and apparently related to) our *Gomphurus* species. But *Asiagomphus* species all seem to be much longer than *Gomphurus*, and have narrower club tails. Unfortunately they like to sit on leaves of trees at about six to eight feet off the ground, which means that I was unable to get pictures of any.

Along the river itself we found *Macromia flavocolorata*. As in the case of *Tramea*, the genus *Macromia* is not often seen in southeast Asia. Most species tend to spend little time at water and specimens are rather rare in collections. *Microgomphus loogali* is somewhat like a large *Stylogomphus*, but with amazingly forked cerci. Like many tropical gomphids, it prefers to perch on tips of twigs near the water. *Gomphidia perakensis* is a large and strikingly marked black and yellow gomphid that sits boldly on a perch right over the swiftly flowing water, challenging all who intrude into its territory.

The only common gomphid, however, was *Merogomphus martini*, which was found on the bushes along the stream. Finding this species posed

an interesting problem for me. From an Indian perspective (Burma was once a part of the British Indian empire, and was included in Fraser's excellent three-volume series on the Indian subcontinent), this species is *martini*. But, not very far away, in Thailand, we have taken *Merogomphus parvus* several times. On our first Thailand trip, none of Asahina's papers had yet been published, and we used the Indian name for the Thai bug. On reflection, I am not certain that these species are distinct, which is often a problem when one collects in two nearby areas that have had different histories of odonate study. There is a similar problem with *Ictinogomphus rapax* (India and Burma) and *decoratus* (Thailand and Malaysia). Again these appear to be the same species burdened with different species names on opposite sides of political boundaries.

The total odonate fauna on this river was not large, and there were few damselflies. An undescribed, and rather striking, *Drepanosticta*, was found clinging to roots at a tiny seep only a few meters from the picnic debris of the park visitors. The small cordulid *Macromidia genialis* patrolled less than an inch above sandy seeps along the river bank. And all this was in a minute patch of remnant forest less than 100 meters wide along the stream. Just to the side were paddy fields newly flooded and difficult to maneuver. Walking through the maze of fields was like climbing soggy stair steps to reach the next level and then balancing on narrow berms above the mud. Flying over these fields were literally thousands of *Pantala flavescens*, and a few *Rhyothemis phyllis* and *variegata*, butterfly-like dragonflies with beautifully patterned wings.

A visit the next day to a cave filled with Buddhist images (a very popular tourist place in this very religious country) added few odonates to our list. Happily the cave had a stream running from its mouth. *Zygonyx iris*, a large stream and waterfall dragonfly, was abundant here. In a tiny dark seep next to the cave entrance we found the lovely *Coeliccia loringae* – one of the slender forest damselflies of southeast Asia. Flying with it was the small *Protosticta curiosa*, which is widely distributed in this part of the world. Both damselflies are easily taken with the fingers, and I was able to get good photographs of the *Coeliccia*.

It had become obvious to us by this time that we weren't going to find primary or even secondary forest in Myanmar. The roads are so sparse that one simply can't drive to a forested area. And, within easy reach of the few drivable roads the forest has been cut back. Thus, our focus shifted to pond and lake habitats. The Kandawgyi botanical garden in Maymyo has a lovely central pond with abundant emergent grasses. We found the presence

of a large flock of ducks somewhat disconcerting (two of the most popular species were our wood duck and cinnamon teal, which looked really out of place here!), but damselflies were abundant in the grasses. I finally found, after years of searching, the elusive, tiny *Enallagma parvum*, which Mike May assures me is not an *Enallagma* at all. We also found *Cercion dyeri*, a member of an *Enallagma*-like genus badly in need of complete overhaul. The black-winged *Rhyothemis plutonia* fluttered around the shore and its smaller cousin *R. triangulare* perched on grass stems. The large *Tramea*-like *Hydrobasileus croceus* flew in tandem pairs over the water. And king of the castle was the large, bold black and yellow gomphid *Ictinogomphus rapax*, which patrolled relentlessly and perched on sticks just out of reach.

After Maymyo we drove to Kalaw, which took an entire day over poor, mainly mountain, roads that were crowded with overloaded trucks going to and from China, which is Myanmar's major trading partner. Our small van broke down (the generator expired dramatically with a loud shriek) and we found ourselves stuck on the main road between Mandalay and Yangon for two hours. There was little to do, but some diversion was provided when a pair of youths came along with an ingenious device consisting of a motorcycle battery and a coil. Wading in a dirty, shallow canal along the road, they found and stunned many small fish that were probably their evening's dinner. And that ditch did yield *Brachydiplax sibirica*, which was new to me.

Kalaw is another hill station, and was an active military center in the Second World War. We didn't even look for forest, but concentrated on some small ponds around the town. One of the most interesting things we found here was *Anax indicus*, which has long been confused with the common and widespread *A. guttatus*. But whereas *guttatus* has dull, round green spots on the abdomen, *indicus* has a vivid pattern of hieroglyph-like orange marks. It is a lovely beast. We also found *Tetracanthagyna waterhousei*, a gigantic aeshnid that, like so many tropical aeshnids, lays its eggs well above the water in seemingly dry moss on rocks and wood above very small streams.

In one very grassy pond near the golf course we found abundant damselflies, including bright red *Ceriagrion chaoi*, several tiny *Agriocnemis* (here the *A. pygmaea* were smaller than the *A. nana*, which is the reverse of what we had found in Malaysia), numerous *Ischnura rufostigma*, and a large selection of pond libellulid dragonflies. We found a pale blue *Pseudagrion* that I still cannot identify. (This is not a common thing in southeast Asia, where this genus tends to be much more straight-forward than in Africa.). This trip was

Our last stop was Inle Lake, which is a major tourist destination. That means there was one other couple at our hotel, which was built on stilts over the water. Inle Lake is a huge fault-block lake with dozens of small pagodas on stilts over the water. We traveled around in a tiny motorized canoe and watched countless *Ictinogomphus rapax* skimming over the water oblivious of the frequent rain showers that drenched us. Large lakes are generally not good places to find dragonflies, and this was no exception. Although we added a few more lake species – the libellulid *Neurothemis tullia* with its black and white patterned wings, and the drab reddish damselfly *Ceriagrion latericum* – we sensed that we had spent enough time here.

Will we return to Myanmar? There are still some lovely places to visit, but most of them can only be reached by air, and one of the local air lines is referred to as "Corpse Air". Still, a beautiful country with friendly people, and where more people speak English than in Thailand, has much to recommend it. We'll be back. Who can resist a place where "the dawn comes up like thunder outer China 'crost the bay"? [from Kipling]

SECOND ANNUAL REPORT OF THE NEW JERSEY ODONATA SURVEY INCLUDING A STATE RECORD AND NUMEROUS COUNTY RECORDS

Introduction: The year 2001 was a successful one with many new county records and element occurrences for state tracked species discovered here. With the increased interest in Odonata the number of individuals in the field is higher than ever. As result, the number of reports received was nothing short of stunning. Further, fieldwork was to some extent concentrated in the poorly surveyed counties of Camden, Gloucester, Passaic, and Warren. It is no surprise therefore that large numbers of significant records were found. All of these additions, be they state monitored species or not, add valuable information about the distribution of this state's Odonata fauna. Benchmark information of this type will become priceless in the future as we track the impact of continued development schemes. From this we should hopefully glean more information about the ecological needs of these insects.

reviewed are simply not detailed enough to allow acceptance of these without further confirmation. A good many Passaic County records will have to be omitted for this very reason until they can be reliably confirmed. It should be stressed that many groups cannot be reliably identified with a photograph. A photograph of a female *Gomphus abbreviatus* for instance is not very helpful. The list of such species is rather lengthy. In such cases a specimen is beneficial. Finally, it is difficult to accept records for extremely rare taxa without a voucher specimen. One very rare species was continually reported throughout the spring yet without a specimen or at least a photograph as a vague clue its existence will remain unconfirmed indefinitely.

This year's fieldwork has resulted in the confirmed discovery of 44 county records and the addition of one species, *Somatochlora kennedyi*, to the state checklist that at this time totals 179 species. For the sake of economy and space, I limit any lengthy comments to those species currently tracked by the New Jersey Natural Heritage Program.

***Somatochlora kennedyi* – SUSSEX.** This northern species was discovered on June 7 during a visit to Pigwhistle Bog in Andover Twp (A.E. Barlow, T.B. Halliwell). The habitat is a large open limestone fen bordered by hardwood upland forest. Poison sumac and pitcher plants grow abundantly here. During our visit it was estimated that 9 males and 3 females were observed flying approximately 4 feet above the dense vegetation. Oviposition was observed here on two occasions. Males flew slow and deliberate patrols, often stopping to hover and pivot in a number of directions. The bog itself is a glacial relict habitat so the discovery of this species is not entirely shocking. Subsequent surveys of this site have shown that it is frequented by *Somatochlora walshii* during July. At the time of our first visit the fen held approximately 1 foot of water in the area patrolled by *S. kennedyi*. By late July the fen was at best damp but held no standing water.

Calopteryx dimidiata (S3) – CAMDEN. This species was found to be abundant during a NJ Division of FG&W survey of the Fourmile Brook in Winslow Township. This area and adjacent Gloucester County have been poorly surveyed in the past. It was therefore no surprise to find this species in such perfect habitat conditions.

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was found in uncountable numbers here in the cattail swamp and adjacent lake. This is a widely occurring species here. Its previous absence from the Passaic list shows how poorly surveyed this county really is.

Lestes eurinus (S2) – PASSAIC. Found to be relatively abundant at a small temporary pond on Clinton Road located between parking areas P4 and P5. It is interesting to note that this pool was full on June 28 when this species and many others were found. A month later however it was essentially dry. Other interesting species found abundantly here were *Lestes dryas* (S1) and *Aeshna verticalis* (S2S3).

WARREN. Large beaver pond and sphagnum marsh on Millbrook Road at intersection of the Appalachian Trail. Over the course of several visits to this site it was ascertained that an extremely large population of this species exists here. It was particularly rewarding to find new populations of this uncommon species after so many unsuccessful years of searching.

Lestes vigilax (S4S5) – PASSAIC. Wildcat Mountain Wilderness Area, Clinton Rd. July 30.

Amphiagrion saucium (S4S5) – WARREN. Delaware River @ Poxono Island Access. June 8 (T.B. Halliwell).

Argia translata (S2S3) – HUNTERDON. I somehow neglected to report this record to Mike May for inclusion in his 1995 state list. The species was initially discovered on the Musconetcong River @ Point Mountain Road on July 25, 1993. Freshwater mussel surveys were conducted this year at the same site. During our visit this species was found to still be in abundance, eclipsed in numbers only by *Argia moesta*.

Chromagrion conditum (S5) – WARREN. Beaver pond @ Mt. Vernon Rd below Yards Creek complex. May 29 (T.B. Halliwell)

Enallagma basidens (S3) – WARREN. During a visit on July 20, this small species was found in impressive abundance at the White Lake WMA on CR 521. It was outnumbered only by *E. carunculatum*. This is becoming a rather ubiquitous species in north NJ. It utilizes ponds, lakes, slack stream segments, and temporary pools or ditches. As it continues to expand its range and more element occurrences are found, its state rank will likely be changed to reflect a more secure status.

Enallagma cyathigerum (S2) – WARREN. Tom Halliwell and myself made a brief survey of the Upper Yards Creek area on May 29. The weather was cloudy and storms threatened. Miraculously the

sun appeared for 15 minutes during which time Tom noticed an "odd" *Enallagma* in abundance at some small fishless pools. His keen observation added a valuable new record for this species that is considered rare in the state. Our survey was abruptly cut short by a thunderstorm that can only be described as apocalyptic. Soaked and rather shaken by the experience we vowed that we would re-visit the site but not in the near future. A second new colony was discovered two weeks later in Warren at the Millbrook Road locality. This too seems to be a large thriving colony.

Nehalennia irene (S4) – PASSAIC. Small pond, Clinton Rd between P4 and P5 (A.Barlow, J. Bangma). **WARREN.** Small fishless ponds adjacent to Upper Yards Creek Reservoir.

Hagenius brevistylus (S3S4) – CAMDEN. Fourmile Brook @ Malaga Road. One larva was collected with a kick net on June 12. This is a relatively common species found on medium to large sized clean drainages throughout the state.

Anax longipes (S2S3) – SUSSEX. Observed by Tom Halliwell patrolling Lake Oquittunk in Stokes SF on June 19. **WARREN.** Reported by Rick Dutko of the NJ Natural Heritage Program. One individual was observed on July 6 patrolling the Delaware River between Labar and Tocks Islands.

Boyeria grafiana (S1S2) – PASSAIC. Mossman's Brook just upstream of parking area P4, Clinton Road. July 30. (A.E. Barlow). My experience on this stream was consistent with others in the state. Of a total of 26 *Boyeria* netted here, 2 individuals were *grafiana* while the rest were *vinosa*. It often takes great patience to ascertain with confidence whether this species is present or not. An additional new occurrence was found in Warren County during mid August. This second site, Vancampens Brook is in many cases identical to Mossman's. The proportion of *grafiana* to *vinosa* is similar, averaging about 1 in 12 over several visits.

Epiaeschna heros (S5) – WARREN. Millbrook Road @ junction of Appalachian Trail. June 7. (A.Barlow, T. Halliwell).

Gomphaeschna antilope (S2S3) – GLOUCESTER. Fourmile Brook @ Malaga Road. This drainage forms the border between Gloucester and Camden Counties. Several good records resulted from this survey spot. This species was seen flying back and forth over the stream about 8 feet in the air. Its coloration made it easily distinguishable from *G. furcillata* (even in flight). During the month of June I found this species extremely abundant at sites in Atlantic, Burlington, and Gloucester Counties.

Nasiaeschna pentacantha (S3S4) – **WARREN**. During a June 13 visit to the Saxton Falls section of the Musconetcong River this species was encountered patrolling the slack waters above the falls. It was displaying the typical "figure eight" flight pattern and was easily netted standing on the old Morris Canal towpath.

Cordulegaster erronea (S2) – **WARREN**. Observed patrolling a small un-named tributary of the Delaware River adjacent to what the maps call Park Rd, NE of exit 3 on Interstate Rt. 80. The road itself is merely a small path now and not easily found. During our observation of this species patrols a black bear walked within 50 feet of our position. As has been the case with all my black bear encounters, the animal left us un-molested. A second Warren County population was found August 31 in the Allamuchy Mountain Natural Area off Deer Park Road. A total of 9 populations have been recently documented from four counties. Unfortunately, one appears extirpated and another is declining rapidly due to removal of the surrounding forest canopy. It seems plausible that a result of this activity would be the potential for increased water temperature to which the larvae are intolerant.

Cordulegaster maculata (S4) – **CAMDEN/GOUCESTER**. Fourmile Brook @ Malaga Road. Three larvae were collected June 12 with a kick net.

Didymops transversa (S5) – **GLOUCESTER**. Scotland Run below Malaga Lake. May 3. Numerous exuviae were also found.

Epiptera canis (S2) – **MORRIS**. Abandoned RR grade adjacent to power line pond and below Lake Denmark Rd. May 19. (T.B. Halliwell). **PASSAIC**. Small pond, Clinton Rd between P4 and P5 June 4. **WARREN**. Beaver pond on Mt Vernon Rd near Yards Creek complex. May 29. This species does not seem limited to beaver ponds entirely although this is a preferred habitat. The number of beaver ponds available is increasing throughout the northern counties. It is likely that this odonate will be encountered with more frequency than in the past as result.

Epiptera cynosura (S5) – **WARREN**. White Lake WMA off CR 521. May 6 (T.B. Halliwell).

Epiptera princeps (S5) – **GLOUCESTER**. Fourmile Brook @ Malaga Rd. June 12.

Epiptera spinosa (S1) – **OCEAN**. One exuvia was collected by Andrea Bartolomea on July 5 at the Oyster Creek near Daniels Bridge. Further visits to this site will be made next year during the month of May to better understand this population. Given the

lateness of our visit we were fortunate to find any exuvia remaining.

Neurocordulia obsoleta (S1) – **HUNTERDON**. During NJ F&WS surveys of the Raritan River exuvia of this species were found on the bridge abutments of Stanton Station Road. The length of the lateral spines on segment 9 extends well beyond the tips of the paraprocts. I therefore have a high degree of confidence in this determination. Paul Brunelle was kind enough to look at a digital photo of one these specimens and confirmed its identity. Based on the number of exuvia collected here the species may be quite abundant on this section of the Raritan. Subsequent to this discovery a large colony was found to occupy the Musconetcong River in Mount Olive Twp. Oddly, all the adults sampled this year have been *obsoleta* while all the exuvia found appear closest to *yamaskanensis*.

Somatochlora georgiana (S1) – **ATLANTIC**. A large feeding swarm of this species were encountered on July 13 on Park Road within Wharton SF off Rt 206. The site lies due south of Atsion and not far from Hampton Rd where Mike May had collected the first and until now only known specimen in the state. While they were not difficult to net, I sampled only one adult and was promptly chased into my car by a fierce swarm of tabanid flies, which are notorious along this road. My small white Saturn wagon seems to attract them by the hundreds along these sand roads.

Somatochlora linearis (S2) – **PASSAIC**. A single male was netted while patrolling above Mossman's Brook at its confluence with the Clinton Reservoir on June 28. During a subsequent visit a female was observed ovipositing in the mud accumulated along this stream's banks. **WARREN**. A single female was netted along the Appalachian Trail at Millbrook Gap on July 9. A small stream draining the nearby beaver pond appears to be a likely breeding site.

Somatochlora provocans (S2S3) – **GLOUCESTER**. A feeding swarm was encountered on July 9 at Iona Lake at the main boat launch area. Other similar swarms were frequently observed but due to the highflying nature of this group identification was always impossible. I was fortunate to encounter a rare, low-flying swarm at this locality.

Somatochlora tenebrosa (S4S5) – **PASSAIC**. Mossman's Brook @ parking area P4. July 30. **WARREN**. Beaver pond @ Appalachian Trail, Millbrook Gap. July 9. (A.E. Barlow)

Somatochlora walshii (S1S2) – **WARREN**. Observed at close hand flying over the Appalachian Trail near the beaver pond at Millbrook Gap on

June 7. As the many records from the site indicate it is a veritable hotspot for interesting odonates. The sluggish channel running through a nearby sphagnum marsh is the most likely breeding habitat for this species. In addition to this occurrence, 3 other new colonies of this species were found during 2001, all in Sussex County.

Somatochlora williamsoni (S1S2) – SUSSEX. Two juvenile males were netted (one released) flying over the Culvers Lake Lower North Shore Road on May 25. (A.E. Barlow) It is unsure where the exact breeding habitat is and further work will be needed to understand this occurrence. This elusive species has been known previously from two sites in Morris County.

Celithemis verna (S2) – OCEAN. Again, this record has been long known but was somehow not reported to Mike May for inclusion in the initial state list. John Michalski and I frequently encountered this species during trips to a site off Rt 539 near its junction with Rt 70. The locality is a series of bogs and beaver ponds along a defunct RR grade. My last record for the species is May 26, 1991. It would be wise to revisit the site to ascertain the status of this population after a decade's time.

Ladona deplanata (S4) – SUSSEX. This species is not tracked by the NJ Natural Heritage Program but I must comment on this record. I was astonished to receive an e-mail from Tom Halliwell reporting this species from southern Sussex County on May 14. His description left little doubt in my mind and I made several forays to the site to obtain a voucher. I eventually succeeded a week later and could thus sleep at night again. The discovery of this coastal plain species in the ridge & valley is fascinating. Further work is planned for next May to learn more about this disjunct occurrence.

Leucorrhinia hudsonica (S1) – WARREN. An email from Wade and Sharon Wander describing the sighting of "a red *Leucorrhinia*" got the adrenalin pumping as I knew they had found a nice species. The next day Tom Halliwell and I visited the Millbrook Gap site mentioned so often in this article already. Within minutes Tom had one in the net. The species is rather abundant here and seems to utilize the adjacent sphagnum marsh as a breeding site. The marsh itself is open to the sun due to the beaver's activity downstream. The area would otherwise have been a heavily wooded sphagnum bog, unsuitable for this and many of the other rare species encountered here. Perhaps the beaver deserves our applause after all. Wade and Sharon reported seeing this species again at nearby Crater Lake.

Libellula cyanea (S5) – WARREN. White Lake WMA off CR 521. May 30 (T.B. Halliwell)

Libellula quadrimaculata (S3) – WARREN. Beaver pond at Millbrook Gap. Millbrook Road. June 7. (A.E. Barlow, T.B. Halliwell). This species appears to be more abundant than its ranking would imply. Further discoveries may necessitate a change in its state rank.

Perithemis tenera (S5) – PASSAIC. Wildcat Mountain Wilderness Area. Clinton Rd. July 30. (A.E. Barlow).

Explanation of Natural Heritage state element ranks:

The ranks assigned by each species in the preceding are taken from the NJ Natural Heritage database. The ranks are intended to show the level to which a given species is imperiled or stable. The rankings and their definitions are as follows:

S1 Critically imperiled in state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres).

S2 Imperiled in state because of rarity (6 to 20 occurrences). Historically many of these elements may have been more frequent but are now known from very few extant occurrences, primarily because of habitat destruction. Diligent searching may yield additional occurrences.

S3 Rare in state with 21 to 100 occurrences. Includes elements widely distributed in the state but with small populations/acreage or elements with restricted distribution, but locally abundant. Not yet imperiled in state but may soon be if current trends continue. Searching often yields additional occurrences.

S4 Apparently secure in the state, with many occurrences.

S5 Demonstrably secure in the state and essentially ineradicable under present conditions.

Acknowledgments: I would like to thank the many people who have shared their records and insights with me throughout this field season: Tom Halliwell, Wade and Sharon Wander, Peter Grannis, and Rick Dutko all made great discoveries throughout the year. I would also like to thank Jeannette Bowers-Altman for her aid in securing funding and support for research through the New Jersey Division of Fish & Wildlife. Further, my field time with Jeannette and Ian Jones has been priceless. Our many adventures across the state have brought many great records to be sure but the camaraderie and learning were the greatest gifts from the experience. During our state surveys we were often accompanied by Andrea Bartolomea, an

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e-mail from **Ginger Brown**

The odonate season in Rhode Island got off to a relatively late start, but once *Williamsonia lintneri* was flying, we hit the swamps and bogs hard. Three new populations of *lintneri* were discovered this year, all at typical habitat for the species. All three represent new towns for this species in Rhode Island. It looks like two of the three are fairly small populations, but we need to do more exuvial searches next year to confirm this. During our regular monitoring of *lintneri* this year we had one population go through the roof. We have been following this population for several years, and watched it double over the past two years, to nearly 600 (via exuvial count) in 2000. In 2001, we collected 1525 exuviae from the fen. I have never seen a population of *Williamsonia lintneri* this large. Most seem to contain fewer than 100 animals. We have speculated on potential causes of this increase, including a dearth of competitors, among others. We intend to continue monitoring in the future. Results could be very interesting.

Additional records of interest include two new locations for *Gomphus abbreviatus*, a new population of *Somatochlora georgiana*, an

We continue to have an intrepid group of volunteers working across the state and hope to have media coverage shortly on the Rhode Island NPR station and in the Providence Journal.

Mark O'Brien

Somatochlora tenebrosa (Say) has a checkered existence in the lore of Michigan records. The only published record for some time was based upon a specimen listed by Kormondy (1958) from Ingham Co., which in fact was not *S. tenebrosa*, but a male *S. hineana* Williamson, whose collection data was questionable (O'Brien 1998). Thus removed from the state list, *S. tenebrosa* was again added after Carl Freeman caught the first verified records for Michigan in Benzie Co. in 1999 (O'Brien, 1999) I now add a second county record for *S. tenebrosa*, far-removed from Benzie Co., indicating that this species is very likely to have a broader distribution in Michigan.

Somatochlora tenebrosa is a resident of small wooded creeks that can dry to a trickle, and often run through fen and bog-like habitats. Ranging through eastern North America, it reaches west to Wisconsin (Dunkle 2000). Walker and Corbet (1975) indicate that this species prefers shaded areas near small streams, often flying after sunset.

Ives Road Fen (IRF) comprises an area of approximately 697 hectares, in NE Lenawee Co., just south of Tecumseh, MI. It is managed by The Nature Conservancy and there have been significant efforts to try and restore the prairie fen and remove invasive species, such as glossy buckthorn. The fen has a series of small streams emanating from the hillside above the sloping fen, and these streams run through a mucky/peaty soil overlying a calcareous substrate. Several small creeks braid their way through the fen, some running through the restored prairie fen with abundant calciphilic plants (especially Indian Plantain), and others through a shrubby understory dominated by glossy buckthorn. Some of these creeks start out as seeps at the base of the hill and coalesce into larger rivulets that may either join a larger stream feeding into the Raisin River to the east, or may disappear into the ground farther down the slope.

It was this type of habitat that alerted me to the faint possibility of a remnant population of Hine's Emerald (*S. hineana* Williamson) at Ives Road Fen. I first looked for *S. hineana* at IRF in early July of 2000. A single, large *Somatochlora* was seen flying overhead at the top of the slope near some trees, but I was unable to make any kind of specific identification. Subsequent trips later in July that year failed to turn up any more sightings (O'Brien 2000), probably because I was expecting *S. hineana* habits, not *S. tenebrosa*.

Mike Kielb accompanied me on July 1, 2001 to search for Hine's Emerald at IRF. We split up to maximize our search effort, and at approximately 9:30 am, Mike called me on the radio and was excited about a dragonfly he'd finally caught. I

made my way over, and was extremely surprised to see not just an emerald, but a *Somatochlora*! However, it was not *S. hineana*, but its sister species, *S. tenebrosa*. We have fewer locality records for *tenebrosa* than *hineana* in Michigan at this time, so it was a great find. We did see several more males flying along the edge of the woods, perhaps looking for prey. Most were flying about 2 to 3 m above the ground. No other specimens were captured.

On July 13, 2001 Ethan Bright accompanied me to IRF to search for more *S. tenebrosa*. Although no males were observed in the area where the males on July 1 had been seen, we did locate one female *S. tenebrosa* flying and perching on a branch about 2 m above a small creek south of a small boggy area. There is a shrub overstory for most of the length of the stream. Although we did not collect the dragonfly, the body size and ovipositor shape was characteristic of *S. tenebrosa*.

COLLECTION DATA IN MICHIGAN

Benzie Co., Blaine Twp., T25N, R16W, Sec. 25 - edge of cedar swamp, 07/27/1999, Carl Freeman CF-990727-3 [MOS0020256] - 1 female
Benzie Co., Blaine Twp., T25N, R16W, Sec. 25 - dry field at edge of swamp, 08/08/1999, Carl Freeman CF-990808-1 [MOS0025457] - 1 female
Benzie Co., Blaine Twp., T25N, R16W, Sec. 25 - dry field at edge of swamp, 08/08/1999, Carl Freeman CF-990808-2 [MOS0025457] - 1 male
Benzie Co., Blaine Twp., T25N, R16W, Sec. 25 - flying down Herring Rd., 08/08/1999, Carl Freeman CF-990808-3 [MOS0025401] - 1 male
Benzie Co., Blaine Twp., T25N, R16W, Sec. 25 - in field next to cedar swamp, 07/29/2000, Carl Freeman CF-00729 [MOS0026702] - 1 female
Benzie Co., Blaine Twp., T25N, R16W, Sec. 25 - in field next to cedar swamp, 07/29/2000, Carl Freeman CF-00729 [MOS0026919] - 1 male
Lenawee Co., Ives Road Fen, T6S, R4E Sec. 10, NW edge of property, 07/01/2001, M. Kielb & M. O'Brien, MFO010701-1 [MOS0026021] - 1 male

Based upon the Benzie and Lenawee County records and the descriptions of the habitats, it would seem that *S. tenebrosa* should be seen more often in Michigan than it has been, but I think two factors may be responsible for so few sightings. First, its habitat of small streams with woody growth overhanging the stream makes it difficult to find and survey such sites. Second, if the adults tend to fly nearer the wooded area than away from the site, they are less likely to be found. It is a fact that such sites are rarely surveyed, but in light of the several interesting species of Odonata that frequent such habitats [*Cordulegaster diastatops* (Selys), *C. erronea* Hagen, *C. obliqua* (Say),



I was very impressed with the new Museum and the professional staff employed there. When I first drove up to the main building, I was pleasantly surprised by the beautiful huge metal fence that leads to the front doors, the motif for which are large metal dragonflies and mayflies, painted black. The dragonfly is actually the symbol for the Museum, as it states in one of their leaflets, "Dragonflies can be seen as representative of a great many positive images that are related to the Museum's goals and future." It goes on to state that the Museum "uses the dragonfly to illustrate the web of life and the importance of biological niches for all species in natural science." The gift shop/book store within the Museum is called "The Dragonfly Shoppe"! I encourage anyone who is traveling in southern Mississippi to stop in Jackson and visit the Museum of Natural Science (2148 Riverside Drive, Jackson, MS 39202). The exhibits of living freshwater fishes, turtles and other vertebrates is spectacular. My heartfelt thanks to Mary P. Stevens, Librarian, for arranging my visit.

Dennis Paulson

The authors (Richard Primack, Hiromi Kobori, and Seiwa Mori) discuss a movement in Japan to construct ponds for dragonflies, to use children as the prime movers for many individual projects, and to focus on school grounds whenever possible. One of the primary goals of the program is to transform overgrown, polluted, and highly modified ponds to good dragonfly habitats.

Both the city government and the public schools of Yokohama are involved in projects to "reintroduce" children to dragonflies, and the enthusiasm for this has spread throughout the community.

The numbers mentioned in the article are eye-opening. First, and of great interest to most of us is, that Japan supports 180 species of Odonata, perhaps not surprising in a country that, although not very large, has islands that extend from the same latitude as northern Maine almost to the Tropic of Cancer. The second number is daunting: 41 of those species are considered rare or endangered. In Japan, this is considered a cultural as well as a biological loss!

Some other numbers: (1) program coordinators intend to have 300 ponds in just the Yokohama area, where the program began; (2) there are now between 500 and 1000 such ponds constructed throughout the country; (3) events in the Honmoku Citizens Park, one of the first ponds restored (1986), attract as many as 1000 children; (4) 27 species of dragonflies now inhabit that pond.

These dragonfly ponds serve as a focus for an integrated curriculum involving science, social science, and art. For younger children, activities include drawing pictures, counting dragonflies, learning to recognize different species, and observing aspects of behavior. Dragonfly larvae and other pond animals are caught and kept in aquaria for observation. Older students conduct science by testing water quality and looking at overall pond ecology. Some schools have developed series of ponds to serve as a complex natural laboratory as the centerpiece of an outdoor curriculum.

It is apparent that the sky is the limit on what can be done with the simple concept of digging or rehabilitating a pond on a school property. The ponds not only support an array of local species, but they encourage an appreciation of nature in not only the children but also the members of the local community, serving as a springboard for larger conservation projects throughout the landscape.

Sid Dunkle, Secretary DSA

Bob Behrstock informed us that the Weslaco, Texas, chamber of commerce is thinking of terminating its "Dragonfly Days" if attendance does not increase. However, Bob will announce the 2002 (hopefully) event in the Odonata e-list.

The results of the DSA election were announced. With a total of 68 ballots cast, the new DSA officers are: President-elect (beginning 2003) Roy Beckemeyer, Secretary Sid Dunkle, Treasurer Jerrell Daigle, Editor Nick Donnelly, Vice-president Canada Rob Cannings, Vice-president Latin America Rodolfo Novelo, Vice-president USA Mike May, Regular Member (2 year term) Paul Brunelle, Regular Member (4 year term) Steve Valley, and Regular Member (6 year term) John Abbott. In 2005, Regular Members will be chosen for equal 6 year terms on a staggered cycle. Dennis Paulson is the current President-elect for 2001-2003.

At the request of Nick Donnelly, I had prepared a short summary of the **ARGIA** and **BAO** financial account for 2000 and 2001. Dues for both journals

were combined together in one savings account at the SunTrust Bank in Tallahassee, Florida. We began the 2000 year with a 1999 balance forward amount of \$11,629.49. Last year's total expenses of \$9,270.70 were for ARGIA's 11:4-12:4 and BAO 6:1-6:2.

This year (2001), we began with a balance forward of \$9,227.88. Presently, our current account is \$10,977.72. Our current expenses of \$2,707.08 were for ARGIA 13(1) and 13(2). Annual expenses were estimated at \$8,000.00 for all ARGIA and BAO mailings. After all expenses and without any incoming late dues for 2001, our projected surplus by the end of 2001 was estimated at \$8,000.

A brief current financial report was presented at the July DSA meeting in Junction, Texas and a few copies of the report were distributed to the media.

Book Review:

A DRAGON IN THE SKY. The Story of a Green Darner Dragonfly. By Laurence Pringle with illustrations by Bob Marshall. Orchard Books, 64. p., \$18.95.

Reviewed by Nick Donnelly

Several years ago I bought a small book entitled "Green Darner: The Story of a Dragonfly" by Robert M. McClung, published by William Morrow (1956). This was a well written and illustrated book for children of less than ten years of age. I read this story to my children, who enjoyed it. "A Dragon in the Sky" immediately struck me as an update of this earlier one. Although McClung's book was cited by Pringle, it is not clear whether or how it may have influenced the present work. The narrative covers many of the same topics, but, of course, the story of *Anax* migration was essentially unknown in 1956.

This is a fine book, full of information, well illustrated, and presented in an engaging manner. I am not certain what the target audience is. Its language is clearly too advanced for the children who enjoyed Morrow's book, but its format and presentation seems a bit too juvenile for high school readers. I would guess that it is aimed for junior high school, but readers of all ages will learn something from it. I guarantee this.

Pringle has done well in presenting the many facets of the life of this beloved dragonfly. He covers the larval stage thoroughly, illustrating many of the prey organisms that nourish the larva. He describes the elaborate flight mechanism of dragonflies. Pringle presents the migration phase especially well, although the statement that there are two

distinct populations in the north is still somewhat problematical. Do you know a young person who might enjoy this book? I can recommend it very highly. Pringle and Marshall have done a nice job.

Book Review:

ONTARIO ODONATA, vol. 2. Edited by Paul M. Catling, Colin D. Jones, and Paul Pratt. Toronto Entomologists Association. Contact Publication Dept., Alan J. Hanks, 34 Seaton Drive, Aurora, Ontario L4G 2K1 Canada.

Reviewed by Nick Donnelly

Odonata study is alive and very well in Ontario. Following their very impressive Volume 1, the TEA has published Volume 2, right on schedule. The volume covers observations during 2000, but much of the discussion sections include earlier results.

About two thirds of the book is a long data summary. For localities they give latitude and longitude, rather than using location conventions that often diminished the value of earlier data (Do you have any idea how many Loon Lakes there are in Canada?). One small problem for me is that it is not clear which entries are for sightings only, and what some of the abbreviations stand for.

The earlier part of the book consists of 14 sections averaging a few pages each and discussing regional odonate faunas, habitat preferences ("Odonata associated with temporary pools on the Burnt Lands Alvar"; "Odonata of the Sandbanks pannes during 2000"), biology ("European Praying Mantis feeding on a Green Darner"), and conservation issues ("Streams and rivers highlighted as major natural history protection priorities in Ontario based on damselfly and dragonfly indicators"). I think Edmund Walker would have been delighted to observe the vitality of the Ontario Odonata group.

Book Review:

DRAGONFLIES OF INDIANA, by James R. Curry. Indiana Academy of Science 303 p., numerous color figures. \$32.00. Can be ordered at www.indianaacademyofscience.org [Author's advice; I did not find it at this site. Ed.]. Indiana Academy of Science, 140 North Senate Avenue, Indianapolis, Indiana 46204 (ISBN # 1-883362-11-3)

Reviewed by Nick Donnelly

This lovely manual arrived unheralded yesterday - simply a bulky envelope in the mail. But what an envelope! Curry's little book is one of the most attractive and potentially useful manuals that I have

ever seen. The reader should note, however, that "Dragonflies" is used here in the sense of the late B.E. Montgomery, who Curry admiringly profiles in the chapter "History of Dragonfly Biology in Indiana". Montgomery insisted that the word "Dragonflies" must not include the damselflies, and one of the few things that he never accomplished was the successful introduction of a word that would serve as the vernacular name of the order.

Indiana is probably the state that can claim the title "Birthplace of American Odonata Study". Thomas Say of the fascinating New Harmony community published (posthumously) the first indigenous U.S. paper on Odonata in 1839, more than doubling the number of known North American species. E.B. Williamson published the first state "manual" at the turn of the century, and Montgomery was a highly regarded later worker.

Curry's book starts with a brief but very readable account of the immature stages and life history. He adds a spirited and intelligent chapter on conservation of dragonflies, noting, among other ideas, "Pollution is a matter of choice, not necessity." He is clearly in love with his state and its natural features, which affection manifests itself as a large number of mouth-watering habitat photos. These alone will make every reader get his wading shoes and head straight for Indiana.

The individual species accounts, which comprise the bulk of the book, consist of a brief description of each species accompanied by fine color photographs (most taken by himself). These photos, and their presentation in the book, are among the most successful that I have ever seen.

The rush of books that have appeared to date do not help the beginner in the Midwestern part of the country. Curry's book will brilliantly serve anyone in the entire midsection of the continent and will be very helpful for northeasterners and eastern Canadians. It deserves a large audience.

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Book Review:

COMMON DRAGONFLIES OF CALIFORNIA. Kathy Biggs, Azalea Creek Publishing, 308 Bloomfield Road, Sebastopol CA 95472. Price \$9.95. E-mail bigsnest@sonic.net

Reviewed by Nick Donnelly

(This is a belated review. The book appeared last summer but I have only recently seen a copy.)

As if to emphasize the Montgomery common name dilemma (cited in the previous review), this very attractive little guide to "Dragonflies" includes also damselflies. Kathy Biggs has produced a fine,

genuinely pocket-sized, guide to the more common odonate species in California. For each of the 60 species chosen (The state list has about 109 species in all), there is a color photograph and brief description. The selection is a very good one, and beginners will have little difficulty identifying almost everything they encounter.

When I went to California for a few years in the early 50's, there was nothing available except Kennedy's old papers and the 1928 Needham and Heywood book (which was unavailable anyway). I would have found it far easier had I possessed this book.

Kathy tells me that she is remaindering the end of the first printing for \$7.50. And we look forward to the next edition.

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Book Notice:

DRAGONFLIES OF THE JAPANESE ARCHIPELAGO, by M. Sugimura, S. Ishida, K. Kojima, K. Ishida, and T. Aoki. Hokkaido University Press, Nichi 8, Kita 9, Kita-ku, Sapporo 060-0809 JAPAN. Price 60,000 Yen (about \$500).

This book is a lavishly illustrated (color photography and art work), exhaustive guide to adults and larvae of Odonata from Japan, including its surrounding islands. The sample text page with the brochure is in English. I have not seen a copy.

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PINNING DRAWERS AVAILABLE

For those of you who still pin dragonfly specimens, there are fine drawers available. If you are not daunted by the price (\$41.50), you can find all four popular sizes and styles (California, Kansas, Cornell, National Museum) of glass-topped trays. Unfortunately, they are too shallow for enveloped specimens to stand upright. The contact is www.jhdunning.com

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NALGENE® AND ACETONE – A WARNING

Roy Beckemeyer

For many years – as long as I have been collecting dragonflies, anyway – I have used Nalgene® containers to hold acetone for storage and transportation. The high-density polyethylene (HDP) bottles with the trade name Nalgene® have been around for some time and have been widely used for a variety of solvents and corrosive substances.

This note is to alert any other folks who use Nalgene® that the name is now being applied to

leaking. Fortunately, I had placed it inside a large Zip-Loc bag which prevented the acetone from leaking onto anything else.

I would recommend that anyone using Nalgene® containers for acetone to make sure that the product is the traditional HDP material.

[illegible]

TRAMEA

Nick Donnelly

I have only a few sites to report this time. The New Mexico site of Bob Larsen has a good list of the Anisoptera of the state. Most of the species are illustrated by photos, many of them by Blair Nikula. The URL is <http://www.rt66.com/~kjherman/odonata/NMdrngfly.html>

I can't remember that the California site of Kathy Biggs was covered in this column. I have looked at it again after a lapse of time and found it highly useful. The URL is <http://www.sonic.net/dragonfly/>

Roy Beckemeyer's Kansas site has a new server and URL. It is <http://www.windsofkansas.com/index.html>

BACK ISSUES OF ARGIA AND THE BULLETIN OF AMERICAN ODONATOLOGY

The editor is able to provide back issues of **ARGIA**. Please contact T. Donnelly, 2091 Partridge Lane, Binghamton NY 13903. The present price schedule takes into account the different costs of duplication of each number of **ARGIA**. In the event that an issue becomes exhausted, then xerox copies will be sent. **Prices are \$2.00 per issue; these do not include postage; see below.**

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