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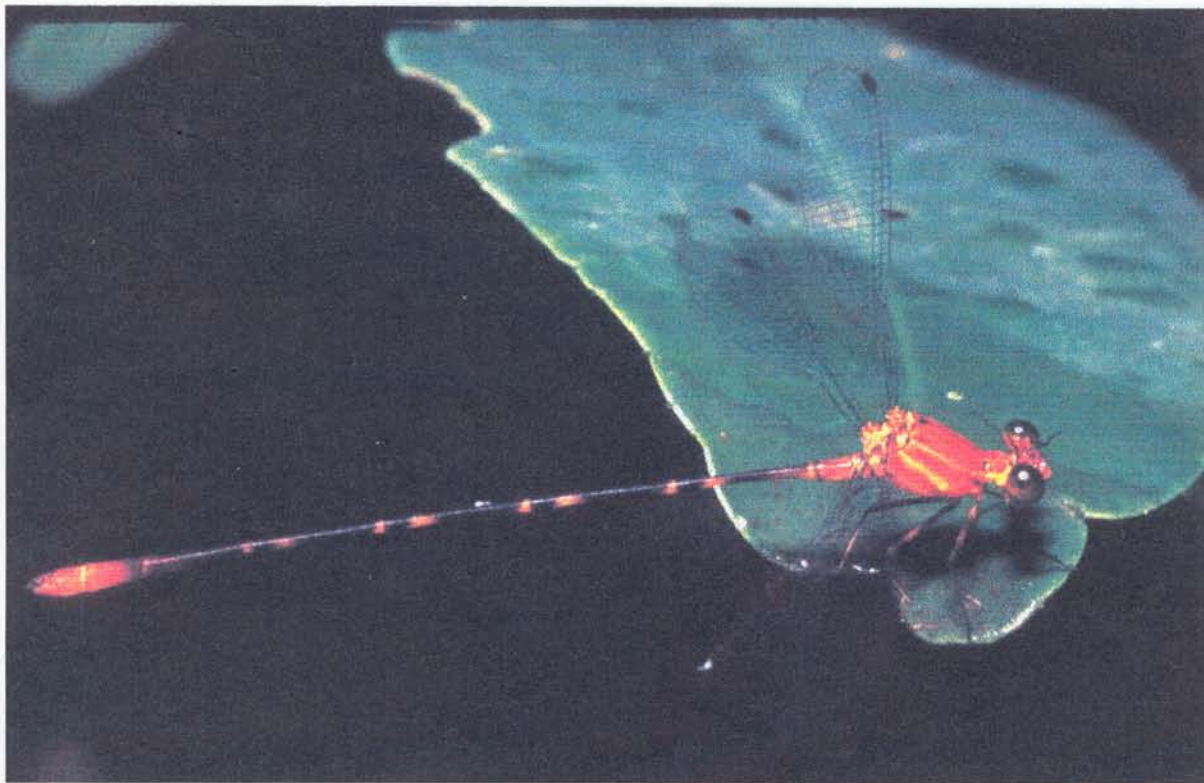
ARGIA

THE NEWS JOURNAL OF THE DRAGONFLY SOCIETY OF THE AMERICAS

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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 \$20.

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

Cover: *Heteragrion consors*, a Brazilian beauty, by Rosser Garrison. See his article in this issue.

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

IN THIS ISSUE

Normally I start off the Spring issue with the news of spring's arrival in Binghamton. This news is usually brought to us by immense wedges of geese flying north. Not this year. This year the geese were two weeks late and somewhat less enthusiastic than usual. Perhaps the complete snow cover dampened their spirits; it has certainly dampened mine. Many e-mail correspondents tell me of the cold winters they are experiencing. The only upbeat call was the cheery voice of Paul Miliotis telling me that damselflies were popping all over where he lives. Which is San Antonio.

However, this is the issue devoted to the plans for all our summer gatherings, and the announcements of these should start the blood pulsing. We have a full menu this year, and we hope that all of you will be able to attend at least one of these field gatherings. The DSA annual meeting will be in the Hill Country of central Texas in mid July. John Abbott has organized a very promising schedule, and we will all see some dragonflies that we have not seen previously. There are two post-meeting field trips: the first to nearby Dolan Falls and the second to southern New Mexico. It will be very hot, but it is dry heat. And there are lots of Dairy Queens in Texas. (and I know nearly every one of them.)

In late May another "Dragonfly Days" will be held in Weslaco. The gathering was highly successful last year, and we anticipate that many people will discover why we love these insects so. There will be a lot of attention to butterflies and other insects, and there will be a post-meeting group tour to Monterrey, Mexico.

The Northeastern DSA meeting will be held this year in southern New Jersey, led by Allen Barlow. This part of the northeast has been surveyed poorly, and there are some enticing habitats that need to be examined.

The first international regional meeting will be hosted by the Ontario group. The groups in Ontario, Michigan, and Ohio have been very active, and we are happy that these groups are getting together. The location will be in a park not far from northeastern Michigan, giving lots of Americans the chance to discover the beauty of this part of Ontario.

The very popular southeastern regional meeting will be held in the late summer, and in two parts. Breaking with the practice of meeting early in the

year, the participants feel that this season will best meet the needs of inventorying the biodiversity of the Smoky Mountain National Park. All of you are probably aware of the decade-long project to inventory the total biota of this park; you may not know that Ken Tennessen represents the Odonata team. The late summer date will maximize the probability of finding some less common odonates, such as species of *Stylurus* and *Sympetrum*. The first part of the meeting will be held about two hours' drive to the west - at Pickett State Park. This gem has always been one of my favorite places, and again we hope that many people will take advantage of these meetings.

The spring issue of **ARGIA** often contains accounts of the travels of our members, who flee the US winter in favor of odonates and other delights in warmer climes. Dennis Paulson spent December in Venezuela, where he traveled widely. Although he inveighs against the dry season, he seems to have done better than most of us do in the wet. Roy Beckemeyer tells of a trip to our old stomping ground, Thailand. But he went to some places we never reached, and we are envious! Rosser Garrison spent a month in Brazil, which is a country little known to non-Brazilian Odonatists. Rosser appears to have had a wonderful as well as a productive time. Finally, Ailsa and I made our first visit to Africa. We were overjoyed to see the large animals, but found the dragonflies (even in the dry season - take that, Dennis) very rewarding.

Dennis Holder and Andrea Kingsley contribute an account of last summer's survey of peatlands in Maritime Canada. They have added substantially to Paul Brunelle's list of Maritime Canada Odonata. Until fairly recently the dragonflies of the Maritimes were very much neglected.

Southern Arizona has been in the spotlight many times recently. Sandy Upson has found another *Argia lacrimans* occurrence. It appears that southern Arizona and New Mexico are becoming a new frontier for North American Odonatists.

Minnesota is a frontier of another sort. One of the less well surveyed states, it has now yielded a record (by Dennis Paulson) for the northwestern *Sympetrum madidum*.

Richard Orr contributes a list of the Odonata of Washington D.C. When I began my interest in dragonflies half a century ago, I lived there and was amazed at the richness of the odonate fauna in and around this major city. Richard has spent several years making it richer still (pun intended).

2001 ANNUAL MEETING - THE TEXAS HILL COUNTRY, JULY 12-15

John Abbott

The meeting place will be Junction, Texas located on the South Llano River in the central Texas Hill Country. Junction is a small town of 2,500 located at the confluence of the South and North forks of the Llano River. It is right off Interstate 10, approximately 120 miles northwest of San Antonio and 120 miles directly west of Austin (both with international airports).

The group will gather Thursday evening and spend all day both Friday and Saturday collecting in the field. On Sunday, those attending the post-meeting trip to Dolan Falls can spend half the day collecting in the area before leaving for about a three-hour drive.

We will have meetings on Friday and Saturday evening in the fellowship hall of the local Methodist church, which is very suitable for showing slides and talking about the past years collecting events.

ODONATA ACTIVITIES:

There are a number of diverse collecting sites in the Hill Country that we can get to fairly quickly from Junction. These include the South Llano River at the South Llano River State Park, the Nueces River, the Frio River (Garner State Park), San Saba River and varied habitats at Lost Maples State Natural Area.

The above collecting localities should provide a number of opportunities to find such goodies as: *Lestes sigma*, *Neoneura aaroni*, *Protoneura cara*, *Argia barretti*, *A. cuprea*, *Enallagma novaehispaniae*, *Ischnura barberi*, *Aphylla angustifolia*, *Phyllogomphoides albrighti*, *P. stigmatus*, *Progomphus borealis*, *Macromia annulata*, *Brachymesia furcata*, *Dythemis nigrescens*, *Orthemis ferruginea* and *discolor*, *Macrothemis imitans* and *M. inequiunguis*.

ACCOMMODATIONS:

The main congregating point for the meeting will be the Comfort Inn off I-10 (exit 456) in Junction. They have agreed to give us the rate of \$55.50 + tax for a room with two beds. We must have at least 10 rooms booked for the meeting to insure this rate, so please consider using this hotel when making your

accommodation arrangements. Just mention you are with the Dragonfly Society of the Americas to secure this rate. I have listed the other hotels and motels in town below.

Comfort Inn (915-446-3572; \$55.50)
Best Western River Valley Inn (915-446-3331; \$50-70)
Days Inn (915-446-3730; \$60-70)
The Hills Motel (915-446-2567)
Kimble Motel (915-446-2535)
La Vista Motel (915-446-2191)
Lazy T Motel (915-446-2565)
Sun Valley Motel (915-446-2505)
Legends Inn (915-446-8644)
Slumber Inn (915-446-4588)

For those wishing to camp the South Llano State Park is just outside of Junction and has a large number of campsites available. Reservations can be made by calling (512) 389-8900, or on-line at <http://www.tpwd.state.tx.us/park/parks.htm>. I would make reservations, as the park is quite popular especially this time of the year and often meets its capacity nightly. This is also a nice place to launch a canoe.

OTHER ACTIVITIES:

Other nearby activities or places to visit include: Enchanted Rock State Park; Fredericksburg which is an old German town with lots of attractions; San Antonio which offers numerous attractions including the famous river walk; and Sonora Caverns, often touted as the most beautiful caverns in Texas.

POST-MEETING FIELD TRIPS (July 15-21):

A) Dolan Falls Ranch - July 15-18

There will be a post-meeting field trip starting at Dolan Falls on the Devils River, which is Nature Conservancy property. This is a beautiful area at the intersection of three biomes where Dolan Creek flows into the Devils River north of Del Rio in Val Verde County. It is among the most diverse areas for aquatic insects in the state and is host to some 60 species of Odonata. Some of these include: *Acanthagrion quadratum*, *Protoneura cara*, *Neoneura aaroni*, *Phyllogomphoides albrighti*, *P. stigmatus*, *Macromia annulata*, *Libellula comanche*, *L. saturata*, *Macrothemis imitans*, *M. inequiunguis*, and *Pseudoleon superbus*. There are screened shelters with cots, but sleeping bags would be advisable as padding. Restrooms including showers as well as full kitchen facilities

The Northeastern DSA meeting will be held in Gloucester Co NJ on 9 – 10 June 2001. This is one of the more poorly known counties in this state, and the Winslow Wildlife Management Area promises to be a very attractive site. Allen Barlow, working now of the state Heritage office, will lead the trip. The group will stay in one of the many motels along the Blackhorse Pike in nearby Williamstown. (Wouldn't it be fun to find a new genus and name it Williamstownia?) The area is also not far from other very interesting sites in southern New Jersey.

Contact Allen Barlow <tramea@optonline.net>
973-426-0074

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GREAT LAKES ODONATA MEETING: July 3-6, 2001

Colin Jones
<naturalist@algonquinpark.on.ca>

LOCATION: Laurentian Lodge, Algoma District, Ontario - <www.laurentianlodge.com> The lodge is located about 30km (19 miles) north of Elliot Lake. There is a map on the Laurentian Lodge website.

The area around the lodge and nearby Mississagi Provincial Park has a great variety of sites that should be excellent for odonate collecting and observation. These include: the Boland River (a sandy bottomed river), the Little White River (nice rapids), the Stag Lake peatlands, and numerous lakes, ponds and creeks.

ACCOMMODATION: Accommodation costs (including all three meals a day) are as follows (in Canadian dollars): \$74/person/night - double occupancy (approx. US\$53) \$89/person/night - single occupancy (approx. US\$64)

Camping is also available at the lodge at \$15/night/campsite for an unserviced site (i.e, no electrical or sewage hook-up). Meals are available in the restaurant for campers if desired.

Camping is also available at Mississagi Provincial Park a few kilometers down the road.

For those interested in attending, it is recommended that a reservation be made as soon as possible as the lodge seems to be very popular. To make reservations for either a room or camping at Laurentian Lodge, give them a call at 1-705-848-

0423 and tell them that you are attending the Dragonfly Meeting.

AGENDA: This will be a very informal meeting concentrating on meeting each other, sharing ideas about provincial/state surveys and inventories, and mostly getting out to survey the local area which has received very little activity in the past - so there should be lots of exciting discoveries.

If anyone would like to present a short slide presentation in the evening, suggestions are welcome.

A little about the Odonate fauna of the area: The area has both northern and southern elements and a combination of both northern and southern species will be flying here. The entire district of Algoma has been very poorly surveyed in the past. Currently, the Algoma list consists of only 66 species and the vast majority of these records are historical records. The most recent records that we are aware of are from 1989! There are therefore many possibilities for additions to the list, and many exciting discoveries to be made. Some particularly interesting species that are expected include:

Coenagrion interrogatum (Subarctic Bluet)
Nehalennia gracilis (Sphagnum Sprite)
Gomphus adelphus (Mustached Clubtail)
Ophiogomphus carolus (Riffle Snaketail)
Helocordulia uhler (Uhler's Sundragon)
Somatochlora cingulata (Lake Emerald)
Somatochlora franklini (Delicate Emerald)
Somatochlora kennedyi (Kennedy's Emerald)

For more information or if you plan to attend contact:

Colin Jones, Natural Heritage Information Centre,
Ministry of Natural Resources, 300 Water St., 2nd
Floor, North Tower, P.O. Box 7000, Peterborough,
ON, K9J 8M5 Tel: (705) 755-2166 Fax: (705) 755-2168

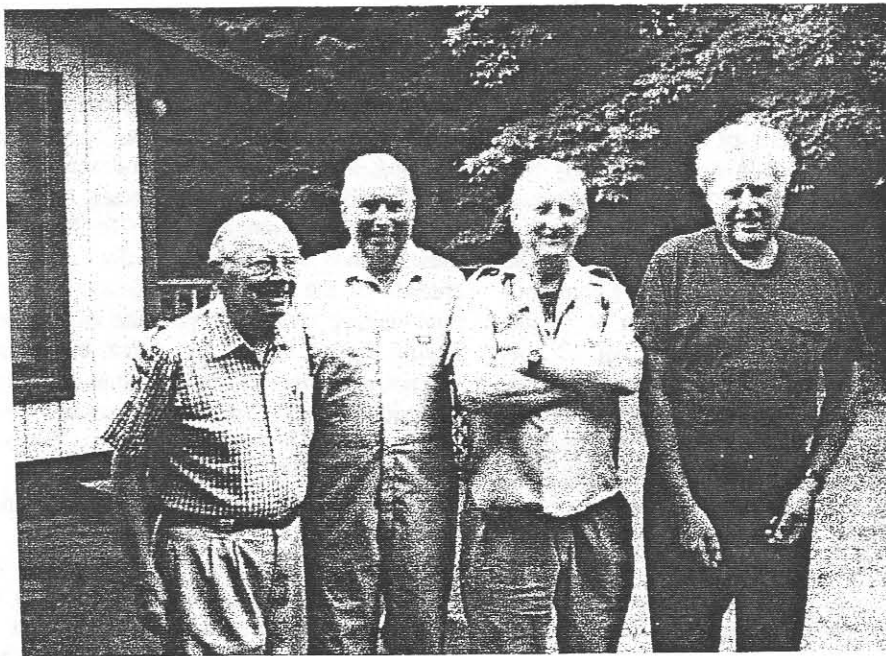
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THE 2001 SOUTHEASTERN DSA REGIONAL MEETING, PHASE ONE

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502-565-3795

At the Cades Cove southeast meeting last year it was decided to add a little variety to this year's meeting by dividing it into two parts. It was suggested that phase one be held in the Jamestown



View of the Cades Cove cabin, in which the party will be staying. In the foreground are Minter Westfall, Carl Cook, Nick Donnelly, and Duncan Cuyler. Photo by Ken Tennessen

last spring. The story is a condensed version of our Cades Cove Cookout story that appeared in **ARGIA** last year. It contains a species list of what we found. Several species were collected for the first time within the Great Smoky Mountains National Park! Interested readers can check out the rest of the newsletter and see what other scientists are discovering in the Park. If you are interested in getting a copy of this newsletter, please let me know. Thanks!

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A VENEZUELAN ODONATE VACATION

Dennis Paulson

Netta Smith and I traveled in northern and western Venezuela for 3 weeks over the Christmas vacation, especially to look for odonates but also, as usual, to take in the natural scene. Most of our odonate work was done in the Northwest (Falcón state), the llanos (several states), and the Orinoco basin (Amazonas state).

The summary statement of the trip would have to be: **DON'T GO TO THE TROPICS FOR ODONATA IN THE DRY SEASON!** I was disappointed at most localities by the low diversity of odonate species, something I assume is a direct consequence of many species flying only in the rainy season. Even south of the Orinoco, where seasons are less pronounced, huge areas that are

flooded during the rainy season were dry during our visit. The biggest disappointment was from a rainforest locality (Campamento Jungla) near the Ventuari River, an Orinoco tributary. We flew in to this isolated camp in the midst of unbroken forest with great expectations, but on the 12-km drive from the airfield to the camp, we saw not a drop of water! The only water was in the river and its largest tributaries, and the great majority of odonates present, I think, were spending the dry season away from the water.

Confirmation of this was provided by scanning with binoculars as we walked repeatedly on a road through primary forest. In every light gap, there were libellulids perched on twig tips all the way up to the treetops. This included *Zenithoptera* and *Diastatops*, two genera that were easily recognizable from below because of their colored wings. In one light gap, I counted 7 *Zenithoptera*, none of them low enough to net or photograph; most perched with their wings closed, as is typical of this genus, but a few opened them briefly, and we actually saw the morpho-blue coloration on the top on one of them. One of them darted into the air after prey, and I assume they persist through the dry season, feeding actively, then breed in the next wet season. I have no idea how many other dragonflies were up in the canopy, but I saw lots of *Erythrodiplax* and *Micrathyria* perched high in trees, as well as a few of these lower down, where they could be captured.

Some groups are really scarce during the dry season, including a number of damselfly families, gomphids, and aeshnids. We saw surprisingly few aeshnids everywhere we went, none (except one *Gynacantha nervosa*!) in the rainforest area. Yet on one evening boat ride along a slough in the llanos, lots of huge *Staurophlebia* (sp.?) came out of the forest and hawked around the boat, and I was heartbroken that I hadn't brought a net on this birdwatching jaunt. We saw enough *Coryphaeschna adnexa* in Venezuela and in Mexico last year (it is also in Florida) to convince me that this species is intimately associated with floating vegetation, especially water lettuce (*Pistia stratiotes*). Some *Erythemis* (particularly *E. mithroides*) and *Telebasis* (*T. filiola* was the most common species) also seem to be especially fond of water covered by floating plants.

We did see some interesting odonates on several "caños," nonflowing tributaries of the Ventuari River, and managed to catch all species seen except an odd *Orthemis*-sized libellulid, all bluish-gray except the extreme abdomen tip, which was bright red. This was the only odonate I saw for which I couldn't hazard a guess of its generic identity. We developed a technique of watching for dragonflies on twig tips (our Indian boat driver had incredibly sharp eyes for both birds and dragonflies) and running the boat toward them with me kneeling like a figurehead in the bow, then cutting the engine at the last moment as I swung. This seemed to catch many dragonflies off guard, and I caught a huge gomphid by this method that turned out to be *Phyllogomphoides major*, the largest species in this diverse genus.

I've had great luck in Peru and Ecuador by walking along forest trails, where the diverse aquatic habitats furnished many odonates, especially females away from the water. But the trail at Junglaven - with bone-dry forest along it - had relatively little diversity, only the common coenagrionid *Aeolagrion flammeum* (where does it breed?) and a few *Hetaerina laesa* and *Mecistogaster linearis* among the damselflies; and two common libellulids, *Anatya guttata* and *Uracis ovipositorix*, with a very few of an additional 5 species. That's a very low diversity for a rainforest site! At one lengthy caño, we spent 2 hours in a boat and never saw a zygopteran of any sort, and I decided this was probably because there was no aquatic vegetation and swarms of hungry fish. I've never seen higher freshwater fish diversity than I did in those caños.

Elsewhere in the country, we found large numbers of *Erythemis* and *Erythrodiplax* species apparently breeding, and these two genera dominated most still water. Quite a diversity of species, but most wide-ranging and common (Jürg De Marmels called these "duck food"). I finally saw *Erythemis credula* in the field, a long-held wish, and noted how much it looks and acts like an *Erythrodiplax*. *Erythrodiplax clitella* and *fulva*, both Venezuelan specialties, were locally common and very beautiful. Other than these genera, the marshy ponds had a few *Ischnura* and *Telebasis*, the streams a very few *Argia* (nothing like the diversity in Central America), *Hetaerina*, and protoneurids.

Neoneura was especially interesting, and we found *N. cristina* (blue and black), *luzmarina* (red and black), and *sylvatica* (spectacular, with sky-blue thorax and red-orange abdomen) all together at one stream. We also found two species of *Epipleoneura* (*metallica* and probably *spatulata*) near Puerto Ayacucho, but never found them on the same stream. *Perithemis lais* and *thais* were also common on small forest streams, quite lovely little amberwing dragonflies with dark wing markings.

In the wide-open spaces of the llanos, feeding swarms of *Miathyria marcella* (the water hyacinth/water lettuce breeder) were everywhere, with lots of *Pantala flavescens* and *Tauriphila australis* and fewer *Tramea calverti*. Dense grassy marshes were full of the tiny *Erythrodiplax paraguayensis* and much tinier *Ischnura capreolus*, and very little else.

I learned a bit more about the puzzling red *Orthemis* species that look so similar as specimens. *Orthemis discolor* is colored the same in Venezuela as it is in Mexico, with bright red face and abdomen, and it contrasted nicely with *Orthemis aequilibris* (we found them together at several places), in which males have darker faces and darker, more purplish abdomens - the same difference as between *O. discolor* and *O. ferruginea* farther north. I'll claim again that some of these *Orthemis* are in fact recognizable in the field. However, we also found the "Antillean" *Orthemis* on the north coast, which looks exactly like *O. discolor* in the field.

We found very few dragonflies in the Andes, unfortunately, but among them was a striking *Sympetrum* that Jürg De Marmels had only discovered last year--black with a vivid white stripe on either side of the thorax and yellow spots on the

a total of about three and a half weeks. That seriously impacts the number and range of odonates one can see, with very few Aeshnidae, and no Gomphidae, Chlorogomphidae, or Corduliidae likely to be around, and limited numbers of even the more common species (I ended up seeing or collecting a total of about 30+ species by the end of the trip.)

We went with a group of twelve other birders and two tour leaders, a Thai interpreter/guide, and three Thai drivers, and traveled in three vans, two full of people and the third full of bags. The birders ranged from enthusiasts like Pat and me to very serious hard-core twitchers. Then there were two very avid entomologists, a lady from Chicago who went after butterflies, and me, the dragonfly nut. I learned early on in my attempts to combine birding and dragonflying that swinging a net in the company of birders usually engenders little in the way of friendly feelings, so I try to either stay back behind the group or go off on my own. Either approach means missing some birds, but I am able to accept that, even though I sometimes miss some incredible avian specialties, the new dragonflies more than make up for it.

I will include odonate names as I go along in this narrative, even though I did not know most of them by name at the time. Thanks to Nick Donnelly for identifying specimens and photos for me. We began our trip in the vicinity of Bangkok (we spent only three nights there on the whole trip, so did not see much of the city). At Kamphaeng Saen University just northwest of Bangkok, I saw my first Thai odonates, a damselfly, *Ceragrion aurantiacum*, and a libellulid, *Diplacodes trivialis*. Accompanying birds were as exotic as Ruddy-breasted Crake, Black Bittern, and Javan Pond Heron, and common as Black-crowned Night Heron (also found around the U.S.). Later that day we visited the famous Buddhist monastery at Wat Pai Lom, where there were thousands of Asian Open-Billed Storks nesting - a very impressive sight. This was a place where it was best to walk with a watchful eye to avoid being bombed - one of our birding companions was splattered very effectively by a particularly accurate stork bombardier.

We headed west and south the next day, along the Gulf of Siam to the coastal town of Hua Hin, near Kao Sam Roi Yat National Park. This is on the east coast of peninsular Thailand near the head of the Gulf. It is characterized by two types of terrain, limestone karst pinnacles and open reed beds. Lots

of shorebirds to be seen, including the tiny but quite pretty Malaysian Plover. The woodlands on the karst hillsides yielded our first primates of the trip, Dusky Langurs, and Crab-eating Macaques, and the first aeshnid of the trip, a brown colored darner that was probably a *Gynacantha*; in any event, it eluded both camera and net. Common as dirt, but heavenly to look at were the fluorescent-feathered birds that made us gasp in surprise: Indian Rollers, Common, White-throated, Black-capped, and Collared Kingfishers and Green Bee-eaters (among others). Also we saw our first Common Hoopoes, those extraordinary-looking creatures with the funny headdresses.

The reed beds were great places for wintering Eurasian LGB's and LBB's (little gray birds and little brown birds), such as Pallas' Grasshopper Warbler, the Reed warblers (*Acrocephalus* warblers), and a couple species of *Phylloscopus* warblers, including the Arctic Warbler. As a sparrow aficionado, I found the intricacies of separating the not-very-distinctive Eurasian warblers difficult but interesting, and one of our leaders, Peter Kennerley, a Brit who has lived in Hong Kong and Singapore since 1984, knows these birds well, so he was able to help us decipher them. (He is in the midst of preparing an identification guide to some of the Old World warblers.) The reed beds were also good for common Asian odonates, including: *Ischnura senegalensis*, *Agriocnemis femina*, *Brachythemis contaminata*, and *Orthetrum sabina*. Interestingly, I met a Thai fisherman while I was collecting some libellulid exuviae from the reeds, and even though neither of us spoke the other's language, I was able to determine that he knew that "malaeng po" (Thai for "dragonflies") emerged from them, which I thought was quite unusual, as I haven't encountered many fishermen in the U.S. who knew what dragonfly exuviae were.

After a few days we moved north and west to within sight of the Myanmar (formerly Burma) border and within hearing of exploding mortar rounds that were being fired across the border on a daily basis (we think by Thai soldiers trying to keep the Myanmar rebels out of Thailand). Kaeng Krachan National Park comprises over 1,800 square miles and is Thailand's largest and least-studied conservation area. Here we saw the Black-thighed Falconet, which looks exactly like a Disney stuffed-toy version of a falcon. Cutest bird of prey we ever saw. Also got great views of Grey Peacock Pheasant, and Asian Barred-Owlet, and saw our first Hornbills (Oriental Pied and Great). What

marvelous birds. Their wing beats sound exactly like the sound you would expect pteranodons' wing beats to make. One particularly large group of Oriental Pied Hornbills that flew over a clearing in the forest looked like a squadron of Stuka bombers flying in on London.

It was here at Kaeng Krachan that I saw my first *Neurobasis chinensis*. This calopterygid, one of the first Asian odonates described (by Linnaeus in 1758) has wonderfully green hind wings that it flashes when it flies. I did not catch any specimens of this beautiful damselfly, but I will never forget seeing it fly. I stayed behind at our resort one day to work on dragonflies. That day, the rest of the group (Pat included) saw more *Neurobasis* together with a large mixed-species group of butterflies that were puddling on the mud alongside the stream. Of course, I missed the butterfly extravaganza (although I saw almost all of the species at other times on the trip - just never together in one place). Pat took a couple of rolls of slides of it, however, and of perhaps two dozen species visible in her pictures, I was able to identify 19 to species. They included some real gems: the pierid *Hebomia galucippe* (Great Orangetip), *Prioneris philonome* (Red Sawtooth), *Cepora judith* (Orange Gull), and *Ixias pyrene verna*, the danaid *Danaus chrysippus* (Plain Tiger), and the papilionid *Papilio demoleus* (Lime Butterfly), *Graphium eurypylus* (Great Jay), *G. sarpedon* (Common Bluebottle), and *Pathysa antiphates* (Firebar Swordtail). I should mention that not only has Brother Amnuay Pinratana published several books on Thai dragonflies and damselflies, but he has published a series of six books that cover Thai butterflies, and one book each on the Sphingiidae (Sphinx moths) and Saturniidae (Silk moths) as well. I regretted missing the butterfly extravaganza, but I would not have wanted to miss what I did get to do, namely admire the intensely red libellulids *Trithemis aurora* and *Neurothemis fulvia* that were common on the little pond near our accommodations - now I know what Dennis Paulson and Nick Donnelly mean when they comment on the red dragonflies of the tropics. Wow! Even some of the hardest core birders actually got excited at their first look through binoculars at *Trithemis aurora*. Other libellulids met with here were *Crocothemis servilia*, *Diplacodes trivialis* (seen almost everywhere on the trip), *Pseudothemis jorina*, and *Trithemis pallidinervis*.

We next traveled to Khao Yai National Park and vicinity, which is north and east of Bangkok. Here we picked up another hornbill, the Wreathed, two

more bee-eaters, Blue-billed and Chestnut-headed, and feasted our eyes on the wondrous barbets: Green-eared, Blue-eared, and Moustached. This was the place for more primates as well, the Pig-tailed macaque and the fantastic White-handed Gibbon, which has a wonderful plaintive howl that sends shivers down one's spine. This was my best place for odonates. I again went off on my own and collected and photographed a number of damselflies and a couple of dragonflies one afternoon along a shady forest trail. Here I saw my first and only chlorocyphid, which I decided to photograph first and catch afterwards. Unfortunately, I didn't even get a chance for a second photo, because it flew off immediately upon the flash discharging, a response quite unlike that of the calopterygid *Mnais* damselflies I later photographed in the mountains in the north of Thailand, which seemed to be "hypnotized" by the flash. The bugs here at Khao Yai included the lovely large green calopterygid *Vestalis gracilis*, a *Lestes* species, the coenagrionids *Aciagrion borneense*, *Argiocnemis rubescens rubeola*, *Mortonagrion aborense* and another *Mortonagrion* species, and my first playcnemidid, *Copera vittata* and *Coelliccia kazukoe* (a really rare species compared to most odonates of the trip which were generally fairly common southeast Asian species). Libellulids here included *Neurothemis tullia* and the "very exotic" *Pantala flavescens*! This afternoon off by myself on a forest trail pursuing odonates was quite exciting - near the end of the day, as the *Vestalis* were beginning to settle onto tree limbs beside the trail, and I was intently stalking them, I looked down and noticed something BIG moving near my feet. I took off running up the trail, and when I had gone 20 feet or so, looked back. There was a twelve-foot long reticulated python coming along after me. I ran on ten feet further, and it gave up the chase. This beast was the diameter of my thigh, and I am really not sure how it missed latching on to me as I went by. I must have initially surprised it as much as it surprised me.

Another feature of the Khao Yai area was a large roost of Wrinkle-lipped bats which we went out one evening to see. It took almost 18 minutes for the entire group to fly out of the caves, and we estimated there were around 1.8 million of them. Also watched a Peregrine Falcon and a Besra (an accipiter) fly around trying to catch a bat for dinner - neither had any luck at it. Quite a spectacle! Also, at our resort we had an open air dining room where we grabbed breakfast early in the morning before departing for the field, and there were some

was there. The 6000-mile distance seemed a lot shorter using this feature!

Most of my work in the Museu was examining hundreds of specimens of *Hetaerina* and *Argia*, two genera on which I am working. Although Janira had used my *Hetaerina* paper to identify males, the females are harder and I identified females mostly from the state of Rio de Janeiro. It was during these sessions that I began to realize that Janira is completely, and I do mean completely, absorbed in her work. She had told me that she loved collecting Odonata and that she could spend hours working on museum specimens. It became a long-standing joke to ask her if she was tired. Her answer would invariably be, "No! I am never tired!" The odonate collection comprises some 1 million specimens, of which about 30,000 are from the state of Rio. The collection boasts the rich legacy of the late Prof. Newton dos Santos, the father of Brazilian Odonatology. His library was given to Janira before his death. About half the days I was in Brazil, we would work diligently in the Museu--both of us discussing problems in the Odonata. I began to realize that Janira has worked on many projects and she seemed to have more papers in preparation than I could begin to count.

On 25 November, Janira took me to Parque Ecológico Chico Mendes near her home. About the only species that Janira and I saw was an occasional *Telebasis filiola*. I was able to shoot a few pictures of this beautiful species.

On 26 November, a group consisting of our driver Hobson, Janira, her students Angélica and Ludamilla, and myself, embarked on our first five-day outing, to Parque Nacional do Itatiaia. The park, located at the far northwestern border of Rio, is the oldest national park in Brazil. It will be celebrating its 60th birthday this June. The Parque is famous as the type locality of the large protoneurid, *Forcepsioneura itatiaiae* (Santos). Perhaps we would be fortunate to see this species. While there, Janira informed me that we would need to produce some published results of our trip as a condition to receiving permission to collect. The small book on California dragonflies was especially intriguing to Janira. After noticing that I photographed dragonflies, she suggested that we produce a similar volume on the common dragonflies and damselflies of Parque Nacional do Itatiaia. I thought this an excellent idea and decided to make photography of the more common species of the park one of my top priorities.

Janira first took us to the magnificent Cachoeira Veu da Noiva at 1,150 m. Here the large *Hetaerina brightwelli* immediately came to our attention. This magnificent species is also one of the most difficult to approach. The males sat on large rocks in streams but sallied back and forth when other conspecifics approached. I often became discouraged when a male would perch on a rock and at my first step of approach, it would fly off to another spot difficult of access. I found that I had more luck over small walkways over narrow stream accesses. *Progomphus gracilis* was common when the sun was out. Males allowed for easy approach and I photographed a male as it perched on a large rock in the stream. A large *Hetaerina* sat on a boulder almost underneath the walkway and I slowly inched my way toward it. I could see through my lens that this male was busily cleaning its wings. "Click," went the shutter (several times for several pictures) and I believed I had succeeded in snapping a picture of the common but elusive *brightwelli*. When I returned to California, I realized that I had photographed a large male *H. longipes*! Janira and I captured a few specimens of a *Brechmorhoga* which both Janira and I believe is undescribed.

Some of the most beautiful damselflies in the neotropical region are members of the large genus *Heteragrion*. Their beauty belies the numerous pitfalls waiting the student who wishes to study them. First, there seems to be a new species behind every bush. Some resemble one another superficially (color patterns) and others have similar appendages. Despite Williamson's valiant attempt to monograph the genus, no serious student seems satisfied with the results. Another serious problem is associating names with types—IF the types can be located! Selys was unsure of what some of his species were and type material is scattered over several museums, or damaged, or, worse still, lost. Bearing these difficulties in mind, it would seem impossible to settle just what species are what. I agree with Frederico Lencioni, who told me while I was in Brazil that he would be inclined to accept identifications only when the types have been studied. Good advice!

I can illustrate the difficulties with our experience of this genus at Itatiaia. We encountered the first specimens of what we thought were *Heteragrion dorsale* along the trail to the falls. This is a large and beautifully colored species with a large, brilliant canary yellow spot on the mesepisterna. I tried to collect every one I could find. I also photographed it on three occasions. Later, when I

began to determine my series in California, I realized that I had collected about equal numbers of *two* species! One species was *dorsale* (a species not treated in Williamson's paper) but the other one is probably undescribed—at least I cannot associate it with any species or species description. This was the first of two occasions on which I was later rewarded for collecting a series.

On 27 November, we hiked to another falls, the Cachoeira Itaporani at 1,100 m. Not finding much of interest at the falls, I decided to head back to the trail. I stopped at a small vertical seepage on the trail and noticed a large, almost invisible protoneurid. Here was the magnificent *Forcepsioneura itatiaiae* at last! It is almost invisible: one must look closely as they hover in front of a leaf tip before perching. I had captured a pair and another male was perched on a leaf tip. As I began shooting pictures, Frederico Lencioni walked up the trail. He was able to collect a pair in tandem. This fantastic species would seem to occur throughout the area but not in numbers. After I returned home, I checked the original description and realized that I had collected this species at the type locality. Had I collected it at the same exact spot where Santos collected it some 32 years earlier?

We visited another famous locality, Rio Campo Belo, a large river below the Parque entrance. Several species occur here including *Hetaerina proxima*, *Argia modesta*, *A. tamoyo* (these last two species have almost exactly the same color and pattern), and *Elasmothemis constricta*. At a marshy seep we collected and photographed *Acanthagrion gracile*, *Argia lilacina*, *Oxyagrion terminale*, and *Erythrodiplax juliana*.

The facilities at Itatiaia were great. Janira arranged for meals to be prepared at a small open-air restaurant. We enjoyed the camaraderie at the end of a hot collecting day. Angélica and Ludimilla love to work with the Odonata. Angélica wants to work with the systematics of *Hetaerina* and *Argia* and Ludimilla is working with Anisoptera. We stayed at a large dorm-like house and evening would find us around a table acetoneing the day's catch and swapping stories of past odonatological adventures.

After our return to Rio and a few more days at the Museu, it was time for our second sojourn. Janira had secured permission for us to travel by military boat to Ilha de Marambaia. The long narrow island that lies west of Rio de Janeiro is restricted. Our

trip out was inauspicious; it was raining very hard and we arrived in the evening. We settled down in our bunks in guesthouses near the beach. The next couple of days were spent collecting along the Gruta da Santa, a trail that led up through a mountainous forest habitat at the island's west end. The Odonata were not abundant but what species we did see were fantastic. I hiked up a forested creek and was greeted with my first specimen of *Heteragrion consors* (see cover). As I headed back down I saw a male of *Perilestes fragilis* hanging under a shrub. I took a few photos and inserted a new roll of film. I would take a few more pictures and then capture it. But after loading the camera, I saw, to my horror, that the specimen was gone. I searched in vain for it. I cursed myself for not capturing the thing first. Rule number one: capture your first one and THEN photograph the next you see. For an hour or so I saw more *Heteragrions* but not another *Perilestes*! Then on the way down to the main stream, I saw another (or the same?) male! This one was in my net the next instant. I also photographed and collected *Epigomphus paludosus* as the blue-green males sat on leaves in the forest.

On the trail leading back to the guesthouse, I stopped at a shaded sandy seepage. Here seemed to be a good habitat for a protoneurid of some kind. I was not disappointed. I collected several specimens of what later we identified as *Forcepsioneura sancta*. When in California, I came across surprise number two. Under the microscope, I detected small but consistent morphological differences between the males; there were two species! I corresponded with Frederico Lencioni and he will be examining some of these to see if a fifth species is known for this genus. Again, a happy surprise and I was pleased that I collected every specimen I could find.

On 3 December, all of us went on a small boat with outboard motor to an isolated area on the other side of the island. Here Janira collected a series of *Leptagrion elongatum*. It breeds in the axils and adults occur around the bromeliad *Neoregalia cruenta*. I had taken a different route on the island. At a shallow rain filled pond, I collected *Tramea binotata*, *T. calverti*, and *T. cophysa*. Along a meandering stream in the forest, the beautiful *Perithemis icteroptera* was abundant.

Our third and final trip was to the Cachoeira de Macucu, a wonderful locality some 20-30 km NE of Rio. We stayed at the house of Ludimilla's parents for the five days we collected. We

Calopteryx angustipennis on steroids) and the brilliant red (with a bright blue face) *Chlorocypha trifaria*. What a way to begin one's year! We also visited the source of the Nile at Jinja, where Ailsa watched an otter frolicking in the river.

Our main destination was the Murchison Falls National Park, in the northwestern part of the county. We booked a reservation at the Simbaya River Lodge, which we had found in the Lonely Planet Travel Guide. The lodge was a five-hour drive from Kampala, and the dryness of the countryside was worrying. Would we find many dragonflies? Any at all? Actually, we left Uganda with 42 species. (Read Paulson's comment on visiting the tropics during the dry season.) Birds, especially hawks and eagles, and also spectacular cranes, were numerous and took the edge off our concerns.

We reached the lodge at about 3 o'clock, and I immediately set off to examine a small stream just below our bungalow. When I returned an hour later (having caught a lovely orange *Anax speratus*, and a few *Pseudagrion*) I mentioned to the manager that there were some of the biggest cow hoof prints I had ever seen in the sand. His eyebrows shot up. "Those are cape buffalo!" It turned out that my collecting place along the stream was an interchange on the cape buffalo expressway.

Last year I told of a trip to arctic Canada in which I discovered that collecting could be hazardous to my health. But polar bears only kill you if they are hungry. Cape buffalo will kill you just because they are mean. They are huge, they skulk, and they have an attitude. They are the most serious threat to dragonfly collectors or anybody else wandering in the African bush.

I was told that a few days previously the local buffaloes had "treed the staff" for half a day. Lucky for me the buffaloes were even then resting in the shade on the other side of the lodge. The manager quickly made an executive decision: if I was going to wander around looking for dragonflies, I couldn't be trusted to watch out for the local hazards. So he summoned a park ranger named George, who, with his AK-47, accompanied me for the next week. George was a delightful companion – and a super bird spotter. He would remind me from time to time, "That croc out there is looking at you and figuring out the range." Of course I was too engaged looking at damselflies to have even noticed those beady eyes in the water right in front of me. But crocs and cape buffalo are

no joke, and dragonfly hunting must be done with care in deepest Africa.

Later in the week we would watch from our lodge wart hogs and, yes, cape buffalo, grazing in my collecting place. We especially enjoyed watching a troop of baboons passing through. A few youngsters paused to play "king of the castle" until an impatient adult returned and gave them a good cuffing.

During the next week Ailsa and I saw more large animals than we had expected. During the days of Idi Amin, the Ugandan army had slaughtered everything that they could shoot, but in the intervening years the various gazelles, elephants, giraffes, hippos, baboons, etc., have recovered very well. We spent a week alternately photographing lions and netting odonates, while George protected us from rampaging hippos and stealthy crocs, as well as those nasty buffalo. On one drive I wanted to walk down to the shore of Lake Albert (a lake in the Nile). The shore was lined with reeds that were about 2 meters high, effectively screening out any access to the lake. Finally I spotted a place where there was a narrow gap, and I decided to go to the water's edge to see what was flying. This open place was a "lek" for crested cranes, and 36 of these birds were doing mating dances on the bare soil of the shore. When I walked through, they flew about 50 feet away and patiently waited for me to leave. I regretted disturbing the birds for even ten minutes, but I was rewarded with a tiny red libellulid, *Aethriamanta rezia*, and a lovely red damselfly, *Ceragrion kordofanicum*. As soon as I left, the cranes returned and resumed their dancing as though I had never been there. Meanwhile a couple of young lions waited patiently nearby for Kobs (large gazelles) to come to the water, as they did every day. This was a great place to kill your dinner. I hardly knew whether to catch dragonflies, take pictures, look at birds, or flee for my life.

Murchison Falls is on the Nile, and the entire flow of the river is compressed into a cleft about 6 meters wide. Pratincoles and thick knees (large plover-like birds) live near the waterfall, and in a quiet backwater I found several species of *Pseudagrion* (a coenagrionid like a big *Argia*), *Mesocnemis* (a platynemidid damselfly that looks like a large *Argia moesta*), a dark *Elatoneura* (small protoneurid damselfly) that I can't identify (and totally unlike those brilliantly colored east Asian *Elatoneura*), and several species of purple and red *Trithemis* (libellulids). It is a strange feeling to wade on a sandy bottom and realize that

saturated Sphagnum were generally scattered throughout the open peatland. For odonates, effort was concentrated around these pools. The amount of time we could spend at each peatland was restricted, and we had to maximize our efficiency of inventories. As a result, we chose to do our first surveys in mid June onwards to "capture" the greatest diversity of odonates and other insects, with a second visit in late July. In total, we found 59 species in the peatlands, 12 of which we considered to be species of note. We discovered 30 new county records for the provinces and one species was recorded from Nova Scotia for the first time.

Leucorrhinia patricia (Canada Whiteface). Considered the most northern species of *Leucorrhinia*, it has a very restricted range in Maritime Canada, found in only three places in northern New Brunswick (Brunelle, 2000). We expected its occurrence in Cape Breton Island, Nova Scotia, and were pleased to confirm an occurrence in the Cape Breton Highlands.

Big Barren Bog, Inverness Co. (46°33'N, 60°45'W), is a raised ombrotrophic bog at 1550m (5038') above sea level, at an elevation higher than all other bogs surveyed. Low shrubby growth of black spruce and balsam fir surrounds the open bog, which is dominated by dry *Sphagnum* spp., *Eriophorum* spp. and *Scirpus cespitosus*. Small patches of stunted black spruce and leatherleaf, rhodora and laurel are scattered throughout. Both deep and shallow pools are numerous and are surrounded by purple pitcherplant and round-leaved sundew. In this bog, we collected a male *L. patricia* of a copulating pair perched on a stunted spruce approximately 10m from the nearest bog pool on July 4, 2000. Other individuals that appeared to be this species, but were not captured for confirmation, were seen patrolling at a nearby bog pool. All other *Leucorrhinia* captured for identification were *hudsonica* and *glacialis*. This collection of *L. patricia* represents the first record for Nova Scotia.

Somatochlora kennedyi (Kennedy's Emerald) This species is widespread but uncommon in the Maritimes, previously known from one location in southwestern Nova Scotia and fifteen in New Brunswick (Elderkin 1999, Brunelle 2000). We found single individuals in two bogs during the first round of visits: at Hell's Gate Plain, Northumberland Co., New Brunswick (46°54'N 65°06'W) and Round Lake Bog, Cumberland Co., Nova Scotia (45°39'N 64°20'W). The male

collected at the latter bog on June 24, 2000, represents the first modern record of *S. kennedyi* in Nova Scotia.

Other species of note, seldom encountered in Maritime Canada, include *Lestes eurinus* (four bogs), *Coenagrion resolutum* (two bogs), *Enallagma minusculum* (two locations), *Nehalennia gracilis* (six bogs), *Aeshna sitchensis* (one bog), *Gomphus borealis* (wandering, in two bogs), *Somatochlora forcipata* (one bog), *Somatochlora franklini* (one bog), *Nannothemis bella* (two bogs) and *Sympetrum danae* (one bog). Many of these records represented new county records, as listed below.

New county records:

New Brunswick, Northumberland Co. - *Nehalennia gracilis*, *Gomphus borealis*, *Epitheca canis*, *Epitheca spinigera*, *Leucorrhinia frigida*, *Libellula Lydia*

Westmorland Co. - *Lestes disjunctus*, *Chromagrion conditum*, *Enallagma boreale*, *Enallagma ebrium*, *Enallagma hageni*, *Leucorrhinia glacialis*

York Co. - *Chromagrion conditum*, *Enallagma aspersum*, *Enallagma cyathigerum*, *Enallagma ebrium*, *Gomphus spicatus*

Nova Scotia, Cumberland Co. - *Lestes eurinus*, *Gomphus borealis*, *Somatochlora kennedyi*

Guysborough Co. - *Argia fumipennis*, *Enallagma ebrium*, *Ischnura posita*, *Ischnura verticalis*, *Nehalennia gracilis*, *Nehalennia irene*, *Anax junius*, *Pantala flavescens*, *Sympetrum danae*

Inverness Co. - *Leucorrhinia patricia*

The limits of the project, and personal restrictions, prevented more extensive surveying. Due to the timing of visits, the flight period of *Williamsonia* spp. was missed, although only one bog appeared to our eyes to be suitable for this species. Hopefully, in 2001, we'll be able to expand our surveys, visiting more peatlands with greater frequency, to learn more about some of our peatland odonates. Especially in southwestern New Brunswick, there is great potential to add to Canada's fauna, as has been illustrated by the description of *Neurocordulia michaeli*. Indeed, although the work of Paul-Michael Brunelle and the Atlantic Dragonfly Inventory Program has significantly increased our knowledge of odonates in Atlantic Canada, there are too few people searching such a large, diverse area. For providing help and information, we thank Paul Brunelle and Kate Bredin at the AC CDC.

Stylogomphus albistylus (1) (Chain Bridge Flats 31 May 1997)

Stylurus plagiatus (2)(4)(5)

Aeshnidae

Aeshna umbrosa (1)(4)(5)

Anax junius (1)(2)(4)(5)

Anax longipes (2)(4)(5)

Boyeria vinosa (1)(2)(4)(5)

Epiaeschna heros (1)(2)(4)(5)

Gomphaeschna antilope (H - 1920)(2)(4)(5)

Cordulegasteridae

Cordulegaster bilineata/diastatops (recorded as *C. diastatops*)(2)

Cordulegaster erronea (H - 6 June 1922)(4)(5)

Cordulegaster maculata (2)(4)(5)

Cordulegaster obliqua (H - pre 1921)(4)(5)

Macromiidae

Didymops transversa (4)

Macromia taeniolata (H - 10 July 1907)(2)(4)(5)

Corduliidae

Epicordulia princeps (1)(2)(4)(5)

Neurocordulia obsoleta (2)(4)(5)

Somatochlora filosa (H - 1921)(2)(4)

Somatochlora linearis (1) (Aquatic Gardens 6 Sept 2000)

Somatochlora tenebrosa (1) (National Arboretum 1 July 98 and 30 June 2000)

Tetragoneuria cynosura (1) (Aquatic Gardens and National Arboretum 5 May 2000)

Libellulidae

Celithemis eponina (1)(2)(4)(5)

Erythemis simplicicollis (1)(2)(4)(5)

Erythrodiplax berenice (H 8 July 1899)(2)(4)(5)

Libellula auripennis (2)

Libellula cyanea (1)(2)(4)(5)

Libellula flavida (H - 16 July 1899)(4)(5)

Libellula incesta (1)(Aquatic Gardens and National Arboretum June-September 2000)

Libellula luctuosa (1)(2)(4)(5)

Libellula needhami (1)(2)(4)(5)

Libellula pulchella (1)(2)(4)(5)

Libellula semifasciata (1)(2)(4)(5)

Libellula vibrans (1)(2)

Orthemis ferruginea (4)

Pachydiplax longipennis (1)(2)(4)(5)

Pantala flavescens (1)(2)(4)(5)

Pantala hymenaea (1)(2)

Perithemis tenera (1)(2)(4)(5)

Plathemis lydia (1)(2)(4)(5)

Sympetrum internum (2)

Sympetrum rubicundulum (1)(2)(4)(5)

Sympetrum semicinctum (2)(4)(5)

Sympetrum vicinum (1)(2)(4)(5)

Tramea carolina (1)(2)

Tramea lacerata (1)(Chain Bridge Flats 31 May 1997; Aquatic Gardens and National Arboretum June-September 2000)

Calopterygidae

Calopteryx dimidiata (H -- date ?)(3)

Calopteryx maculata (1)(2)(3)(5)

Hetaerina americana (2)(3)(5)

Hetaerina titia (H - pre 1990)(2)(3)(5)

Lestidae

Achilestes grandis (1)(National Arboretum 1 September 2000)

Lestes dryas (H -- date ?)(3)

Lestes forcipatus (2)(3)(5)

Lestes inaequalis (1)(Chain Bridge Flats 31 May 1997)

Lestes rectangularis (1)(2)(3)(5)

Lestes unguiculatus (H - 31 July 1899)(2)(3)(5)

Coenagrionidae

Amphiagrion saucium (2)(5)

Argia apicalis (1)(2)(3)(5)

Argia bipunctulata (H - two records from 1899)(2)(3)(5)

Argia fumipennis violacea (1)(2)(3)(5)

Argia moesta (1)(2)(3)(5)

Argia sedula (2)(3)

Argia tibialis (1)(2)(3)

Argia translata (2)(3)(5)

Chromagrion conditum (3)

Enallagma civile (1)(2)(3)(5)

Enallagma divagans (1)(Chain Bridge Flats 31 May 1997)

Enallagma durum (1)(2)(3)(5)

Enallagma exsulans (1)(2)(3)(5)

Enallagma geminatum (1)(Aquatic Gardens 5 May 2000; National Arboretum 1 September 2000)

Enallagma signatum (1)(2)(3)(5)

Enallagma traviatum (3)(5)

Ischnura hastata (1)(2)(5)

Ischnura kellicotti (1)(Aquatic Gardens from May-September, 2000 (the most numerous odonate species at the Gardens)

Ischnura posita (1)(2)(3)(5)

Ischnura ramburii (2)(3)(5)

Ischnura verticalis (1)(2)(3)(5)

Nehalennia gracilis (H -- date ?)(2)

Please send additions, comments, corrections, changes to Richard Orr, 5215 Durham Rd. East,

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VOTE ON DSA BY-LAWS

The votes are in on approving the DSA by-laws. It seems like voting fever spread after the close US Presidential election! There were 99 votes to approve the by-laws in their entirety, and 6 people had 11 objections to the wording or content of 7 sections of the by-laws. So, the by-laws in their entirety are accepted by the DSA membership by a landslide.

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WILLIAMSON DRAGONFLY GUN CONFISCATED!

Mark O'Brien

In early February, Univ. of Michigan Dept. of Public Safety and Security conducted an inventory of firearms being stored in the Museum of Zoology. While most of the attention was on the Bird, Mammal and Herpetology Divisions, it turned out that the only illegal weapon being stored here was in the Insect Division. Yes, you guessed it - the 22-cal. pistol with a soldered on 26" barrel that E.B. Williamson used to shoot down high-flying Odonata. He used 22 - cal. dust-shot rounds, which were only potent enough to bag small creatures. I suspect that E.B. subscribed to "walking softly and carrying a big stick" and certainly the weapon in question looks somewhat impressive. Officer Tim Shannon was very apologetic about confiscating the pistol, as it was illegally modified under State law and also illegal under campus policy. However, since the weapon has not been fired in probably 75 years, it will not be a loss in terms of its use. At my suggestion, they'll make the pistol inoperable and return it so we can mount it on a plaque for display. Okay, so you thought dragonflies were harmless. They used to be bigger and a lot meaner, which was why EBW carried the weapon in the field. I don't know if they ever used dynamite for catching larvae.

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WDA: PRESENT STATUS REPORT

Jill Silsby, Secretary/Treasurer, Worldwide Dragonfly Association

I would like to put members of DSA into the picture regarding the current state of WDA.

1. The International Journal of Odonatology (PANTALA). It was not easy to produce a scientific journal for a completely new international society. At the time PHOENIX (later Worldwide Dragonfly Association) was founded in 1997 there was only a handful of members and no manuscripts at all! Everything had to start from scratch and of course it was not perfect to begin with: how could it be? The new journal had teething problems but, thanks to the unstinted efforts of the publishers (Backhuys), the Editor (Henri Dumont - how lucky WDA was to have him), the Editorial Board and the reviewers as well as others who gave so much of their time and experience in order to iron out problems, PANTALA is now a journal of which we can be justifiably proud.

Towards the end of the year 2000, after Volume 3 (2) was published, Henri decided that pressure of work made it impossible for him to continue editing Pantala and he asked to be relieved. With reluctance, the Board of Trustees accepted his decision and set about finding a replacement. Again we were so lucky. Reinhard Joedicke, due to ill health, found he had an enforced vacuum in his working life that he wanted to fill. With the promise of his wife Monika's support, he offered his services to WDA and the Board was delighted to accept his offer.

The handover has been made; Backhuys and Reinhard have forged an excellent rapport; Henri was able to provide Reinhard with a good number of MSS. in varying stages of readiness and Volume 4 (1) is promised in April 2001 and the next six months later.

However, like editors of scientific journals the world over, Reinhard can never have enough papers and he asks us all to assist with a continuing flow in the months to come. Anyone with a paper to publish, please contact Reinhard: R.Joedicke@t-online.de

2. ODONATOLOGICAL ABSTRACTS.

These are produced by Martin Lindeboom and Martin Schorr and it is hard to express adequate appreciation for the amount of work and effort they put into the production. They appear twice a year, at the same time as each issue of WDA's AGRION and can now be accessed from a secure site on our webpages (See 3. below) by all paid up members. Anyone who publishes a paper in any publication, please inform the two Martins at: FOEATRIER@aol.com

students of the order because they are publications; it is debatable whether lists from the Internet can or should be cited as a publication.

The Steinmann catalogue comprises two attractive clothbound volumes. Volume I spans 500 pages and covers the Zygoptera, Volume II comprises 636 pages and covers the Anisoptera. The volumes measure 6 1/2 by 9 1/2 inches. So much for the general appearance. At approximately one dollar per page (and with no illustrations at that!), these books have probably reached a record price and would seemingly place them in the league of volumes offered for sale by rare book dealers. Even though one is accustomed to the ever-increasing cost of technical books, the price for this set is astronomical. So is the layout and content worth their steep price? Easily, the answer is a resounding "No".

In a word, this catalog is simply awful. It must be one of the worst researched publications I have ever seen. Steinmann, who is not an Odonatist, must have relied solely on the previously published catalogs of Davies and Tobin (1984, 1985) and there seems to be few additions of taxa beyond those years. It seems inconceivable that the author apparently never submitted a draft of the work to any specialist for review. The catalog is plagued with errors and incorrect citations; if the original description was unknown to the author, he simply refers the reader to the page number in Davies and Tobin!

The numerous errors I found in *Hetaerina* and *Mnesarete* (two genera with which I have been very involved recently) engender little trust for those wanting to use this catalog as reference. It is (unfortunately) the job of the systematist to consider all previously published information when revising certain groups. Thus I suppose that any serious worker will have to consider this catalog when doing any systematic work. Maybe one can ask someone to photocopy certain pages pertinent to their work (at least the cost of copying will be less than a dollar per page!). Otherwise, this is one catalog I can confidently advise you to forget. Keep your money and go out and use it for that computer upgrade you wanted.

The new 430-page catalog by Tsuda is the third edition (the first was in 1986, the second in 1991) and follows a similar format as the older editions. New and interesting material for this edition include statistics on the total number of families (28), genera (630), species (5412), species without

subspecies (5054), species with subspecies (358), and number of species and subspecies (5969). Other interesting data: there are 252 species with one subspecies (nominotypic plus another subspecies), and only one with twelve subspecies (thirteen if you include the nominotypic subspecies). Also of interest is the listing of new genera and species proposed since the appearance of the 3rd (and last) edition of Bridges' 1994 catalog.

In my first review of this work, I stated: "The work concludes with distributional lists of the Odonata for Japan, Taiwan, Hong Kong, the Philippines, Indonesia, continental Southeast Asia, Europe, Central and South America, and southern Africa. These lists will be valuable, but one wonders why similar listings were not generated for North America and all of Africa." Added in this new edition are lists for China, the Russian Federation, Australia, Africa (as northern, western, southern, central, and eastern Africa), Madagascar and surrounding islands, and North America. The volume is paperbound but the pages do not lie flat thus making it hard to use.

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DASTARDLY DRAGONFLY EGGS

e-mail from Mark O'Brien

Researchers in Brazil have finally discovered why dragonflies lay their highly-corrosive eggs on newly manufactured cars - especially green, red, dark blue and black cars. Specialists from the University of São Paulo discovered that dragonflies mistake the shiny surfaces of new cars for water.

Researcher Etelvino Bechara said, "When in contact with the hot metal (of a sun-warmed car), the dragonflies' eggs produce an acid as strong as sulfuric acid that gnaws away at the paint." Bechara noted that the corrosion begins within three hours after the eggs are laid.

Professor Bechara began his research after automotive assembly line workers noticed that paint on newly manufactured cars had corroded. After studying the problem for two years, Bechara concluded that an optical illusion induced the dragonflies to lay their eggs on the cars.

He noted that the surfaces of cars painted with dark colors can reach temperatures much higher than those of white cars when parked in direct sunlight.

The white cars with their lower temperatures are far less attractive to the mating dragonflies.

University of São Paulo researchers are developing a additive to protect automobile paint from the effects of the eggs.

WILLIAMSON QUOTE OF THE MONTH

e-mail from Ellis Lauder milk

E.B. Williamson certainly had a way with words, and I enjoy reading his work. Each time I see, and especially attempt to capture, a *Boyeria vinosa*, I am reminded of Williamson's (1907) comments

"... its tendency to examine critically every object projecting above the water often makes its capture an embarrassing matter to the collector. More than once as I waited for an approaching male that insect suddenly left the line of flight I had mapped out for it, flew to within an inch of my legs, circled around one leg a time or two, then the other, then about both, and then quietly resumed its flight along the stream, oblivious to the net which had been frantically fanned all around it."

FUTURE DSA MEETING PROPOSALS NEEDED

Jerrell J. Daigle, jerrell.daigle@dep.state.fl.us

We need 2002 Southeast National DSA host proposals for presentation at the Texas DSA national meeting in July. States such as Alabama, Georgia, Kentucky, Louisiana, Mississippi, South Carolina, Virginia, and West Virginia have not been selected in the past as Southeast host states.

If you would like to host the meeting, please submit your proposal to me. Keep in mind that we have been averaging about 45-50 people the last several years with 64 being the attendance record.

Also, I am seeking proposals for the 2003 Central DSA national meeting. Please let me or Tim Cashatt, the Central region coordinator, know if you want to host the 2003 DSA meeting.

Furthermore, I am seeking proposals for the SE regional meetings for the years 2002 and 2003. Please let me know if you want to host a regional meeting in the Southeast or any of the above meetings. Thanks! See you soon!

Poem: FLASH AND FLICKER

Kay Glover

Dragons are black,
Darners are blue,
They dance in the air,
So delightful to view.

They're darting to left,
There's a swoop of the net,
A foot slips in muck,
He'll get that one yet!

Colors flash and then flicker,
As the net makes the swing,
Tempting him on,
That devilish thing!

The chase goes on,
From small pond to stream,
Mocking the man,
Who lets out a scream.

Thorns pierce the skin,
Ah, another new scar,
Defeated today,
He heads for the car.

A drink from a bottle,
A bite from a peach,
The dragonfly of course lands,
Just out of reach!

NEW ADDITIONS TO THE UNIVERSITY OF MICHIGAN MUSEUM OF ZOOLOGY ODONATA LIBRARY

Mark O'Brien

We recently recieved a shipment of books belonging to the estate of Leonora (Dolly) K. Gloyd from her son, Roger Gloyd, of Plano, TX. Mrs. Gloyd had been an adjunct curator of Odonata at the UMMZ for nearly 50 years, and although we had her reprints and specimens here at the UMMZ, her personal library had been sent to her son when she left the museum to live in Texas. Dolly had acquired many books on Odonata, some of which are quite rare. All of the Odonata-related books will be housed in the Williamson-Kennedy-Gloyd Odonata Library. The non-Odonatological works will probably be sold if already represented in our

library. The sales will go towards the support of the Michigan Odonata Survey. Check our web site for more information about book sales in January 2001.

http://insects.ummz.lsa.umich.edu/MICHODO/MO_S.html

I am pleased that Roger Gloyd considered the UMMZ for the final destination of Dolly's books. When one considers her long association with the Museum of Zoology and the connected web of Gloyd, Williamson and Kennedy, having these collections together merely reinforces our strong Odonatological heritage.

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BATS GLEANING DRAGONFLIES

e-mail from Elizabeth Kalko

<Elisabeth.Kalko@biologie.uni-ulm.de>

[For those of you not on e-mail, there has been a flurry of messages asking whether bats can seize perching dragonflies. They may have missed the article in last July's **ARGIA** by José Ramos cataloguing these captures by a Cuban bat species. Ed.]

"And the *Micronycteris megalotis* work is indeed progressing, I had not much time because of all the job hassles during the past years to finally get the initial work published, but now I have one masters thesis finished with the question how the bats find the dragonflies. Right now I have a masters student working with infrared filming on the bats. And we know now for sure that these guys take dragonflies ALL NIGHT LONG and what is superb, they do use echolocation to find them! Which is truly neat because so far it was assumed that motionless prey in clutter, that is sitting on leaves etc., cannot be found by echolocation alone. But these guys can do it..."

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MANTIDS EATING DRAGONFLIES

Several recent e-mails have noted mantids eating dragonflies, including our gentle giant, *Anax junius*, the green darner.

David Bree, Bloomfield, Ontario, writes:

"On September 13th, 2000 I was walking through an abandoned agricultural field in Sandbanks Prov. Park (Ontario, Canada). The field is adjacent to the north shore of Lake Ontario and often hosts resting migrant dragonflies (usually Green Darners) in Sept

and October. This particular morning only a few individuals were present. About half way across the field my attention was attracted by the distinct dry rustling sound of dragonfly wings against the grass. I closed on the sound to discover a young male Green Darner (*Anax junius*) in the grip of a European Praying Mantid (*Mantis religiosa*) of about the same size as the Darner.

"In my two seasons of odonate observation it seems to me that large dragonflies have few predators, I have only seen a couple taken by birds, spiders, and other large dragonflies, and I have not seen anything take a Green Darner.

"Whether the mantid snuck up on the dragonfly as it rested or whether the darner was unlucky enough to land near a waiting mantid is not known. Whatever the case the mantid had its prey firmly by the head and thorax and despite the continued wing flapping of the darner started to feed on its eye. I watched for about 5 minutes, taking a couple of pictures, in which time about one half of the head was consumed. I then left for about 15 minutes. When I returned I expected to find another photo opportunity of the mantid about half-way through its meal. However the mantid was gone and the completely headless darner was lying unmoving on the ground. A number of small ants were already at work on the body.

"I'd be interested in hearing about any other predators of large Darners in N-Eastern North America (I'm sure to get questions this summer when I tell this story in the park)"

[David Bree Box 123 Bloomfield, Ont K0K 1G0 Canada 613-393-1965, dbree@post.kosone.com]

Hal White adds, "Several years ago, I was wading through one of my favorite marshes here in Delaware in September. It has many isolated tussocks of vegetation about a meter in diameter. Around a few there were many dragonfly wings floating in the water and none around the others. Each tussock having wings around it (perhaps 10 or so) was occupied by a very well-fed preying mantis. I photographed one in the act of eating a *Pachydiplax longipennis* (Blue Dasher in the "popular lingo"). Although I didn't collect and identify the wings to species, the size suggested that most of the prey were *Pachydiplax*. This makes sense because it was the most abundant perching dragonfly there. My guess is that hundreds were consumed in that marsh alone that year."

[Hal White (halwhite@UDel.Edu)]

It is named PHAON (Pinhey's Heritage African Odonata Network) in honor of the late Elliot Pinhey, who was a giant of the study of African Odonata. To subscribe communicate your interest to <Dijkstra@naturalis.nnm.nl>

Recently we have learned of some additions and changes of URL's for dragonfly sites:

David Kitching's (Cheshire dragonflies) web site is now at <<http://www.brocross.com/dfly/dfly.htm>>

Costantino dr. D'Antonio's site, "List of Italian Odonata" is <www.procidamix.com/odonata.htm>

F. K. Kakkassery, in St. Thomas College, Trichur, Kerala, India, has launched a new site on the Odonata of India. <www.geocities.com/indianodonata> Give it a visit.

Jay Cossey, a professional photographer who shoots insects for a hobby, has a gallery of butterfly photos at <www.images.on.ca/JayC>. He has some good dragonfly photos.

It may be the time to bring up gazetteer sites again. Several issues ago I listed some sites from which you can find out where obscure localities are. I regularly use Canadian and American governmental sites to find locations for odonate specimens. This has been highly useful for the dot-map project.

The sites are; Canadian: <<http://geonames.nrcan.gc.ca/english/Home.html>>

American: <<http://mapping.usgs.gov/www/gnis/>>

For other countries: <<http://164.214.2.59/gns/html/index.html>>. This site seems to be the lineal descendant of the old "blue books" which were issued by the CIA and were an invaluable source of location information for foreign countries. Of course, using this information is not always easy. Many countries with their own alphabetic characters write the Roman-character versions of their names in different ways. I just tried a prominent Thailand city to see what would appear. For "Chiangmai" I received four replies (airport, population center, administrative center, and municipality). For "Chiengmai" there were three replies – omitting the airport. So this site is pretty useful.

Rosser Garrison brought another URL back from his Brazilian trip. It is a place finder rather than a gazetteer. Try it if you are having difficulty finding an obscure locality.
<<http://www.calle.com/world/>>

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