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ARGIA

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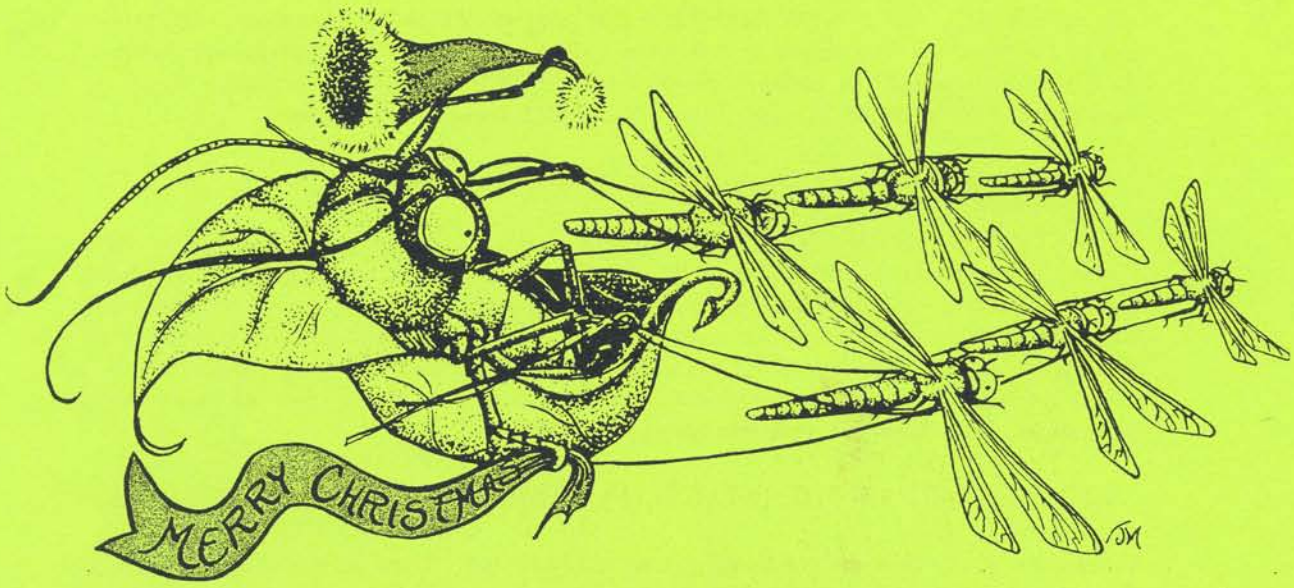

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THE DRAGONFLY SOCIETY OF THE AMERICAS

Business address: c/o T. Donnelly, 2091 Partridge Lane, Binghamton NY 13903

JOURNALS PUBLISHED BY THE SOCIETY

ARGIA, the quarterly news journal of the **DSA**, is devoted to non-technical papers and news items relating to nearly every aspect of the study of Odonata and the people who are interested in them. The editor especially welcomes reports of studies in progress, news of forthcoming meetings, commentaries on species, habitat conservation, noteworthy occurrences, personal news items, accounts of meetings and collecting trips, and reviews of technical and non-technical publications. Articles for publication in **ARGIA** should preferably be submitted and 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 above) 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 contributing membership, payable annually on or before 1 March of membership year. Dues for members in the Old World are $20. ARGIA is mailed Air Mail outside of the US and Mexico, and First Class in those countries.

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

Cover: George and Phoebe Harp's Christmas card. Happy Holidays!

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

IN THIS ISSUE

We are in depths of Winter here in Binghamton, and thoughts turn to dragonflies only with the application of considerable imagination. This is the season to put away the specimens collected last summer, and to check over all those difficult identifications. This is the season to send in those reports that we have been promising to complete and deliver before the end of the year. This is the season to reflect on what we have learned this year and what we might learn next year - when the sun really will reappear.

As our society grows our meetings seem to multiply wonderfully. The National Meeting (2nd announcement) is in Gainesville FL on 6-8 June. The Southeastern Meeting (2nd announcement) is in the Everglades on 3-6 April. The Northeastern Meeting (1st announcement) is in southwestern Vermont on 21-22 June. These meetings have been growing steadily in popularity, and we hope this trend continues.

We also announce some non-collecting meetings. The Ohio meeting is 22 February in Columbus. In May we will have a new experience: meeting with the North American Benthic Society in Sam Marcos TX (26-30 May). This meeting will feature a full day of Odonata presentations.

Our mail brings us further news of organization. Mark O'Brien is following up the organization of the Michigan Odonata Survey with the creation of a newsletter, "**Williamsonia**". It seems that there is a growing center of Odonata activity in the Midwest. In addition to Ohio's February meeting, there is activity of all sorts and wonderful Web sites, including a very informative site in Illinois.

Roy Beckemeyer and I have been working independently on an article summarizing the history of Odonata discovery in the New World. We have decided to combine our efforts in a survey of species descriptions. A result is that the study of Odonata in South America has not even reached a mature status, and even North America is producing new species.

John Michalski has written an excellent account of a recent trip to Trinidad, where he has become a regular. His Book on Trinidad Odonata will be an excellent guide to anyone who wants to go there, and many will, after reading his account.

DSA business includes the election of a new president. The Common Names Committee (a new **DSA** standing committee) presents a few alterations of the recent list of Common Names and notifies the community that three new North American records require three new names.

John Abbott has added two new species to the U.S. fauna: ***Dythemis maya*** and ***Tauriphila azteca***. We have many additional reports, some of which report exciting new finds. We have heard from Kansas, Virginia, Maryland, Washington, British Columbia, New York, and Connecticut. In addition we include a note on the new finds of the recent Ecuador trip reported in the last issue.

Books are also featured in this issue. Jerrell Daigle reviews the new guide to Hawaiian Odonata, and Peter Classey reports that he has acquired a stock of the classic book on Odonata by Corbet. Speaking of which, Philip Corbet has moved to just about the southern tip of England and gives his new address. It is wonderfully sunny there, but it still isn't warm enough to have dragonflies the entire year. We also include Minter Westfall's new address, confusingly in another Gainesville.

Mike May and Dave Moskowitz are requesting observations and information. Can you help them out? Matt Holder is requesting Ontario information. Which reminds me (and you) that the dot-map project is still alive but very much in need of YOUR DATA!

Bill Mauffray (**IORI**) does much more than organize the National Meeting. Bill is offering several books for sale, and also envelopes for specimens. His Web site continues to lead a growing selection of available sites for Odonata (I count more than 600).

A beautiful lithograph of a dragonfly is offered for sale by Barry Flahey in Ontario.

The Web is also featured by announcements of an Ohio site, an Illinois site, Dennis Paulson's Washington site, and a German site devoted mainly to taxonomy and phylogeny.

Steve Walter contributes three short behavioral notes which will stimulate our imaginations and powers of observation.

John McLure has contributed a poem which will evoke memories for many of us who have returned from a day's hard work having failed to net a specimen after hours or work.

Lacking at present any capability of duplicating color for these issues, I cannot show you Jean Held's colorful Christmas card. You should get on her list and see her designs. This year has a Christmas tree with ***Sympetrum vicinum***. George and Phoebe Harp's card is reproduced (without the red color) on our cover.

We finish up with some corrections and additions to our e-mail list. Speaking of which, if you are not on e-mail, you are missing out on a lot. This mode of communication is so fast, cheap, and easy that it is effectively replacing the letter for exchanging information. I have installed a new e-mail program that now allows me to translate encoded files easily - I could even bring up Bob Barber's beautiful illustration with his Christmas message. An increasing number of contributions for **ARGIA** arrive as e-mail messages and files.

Finally, we append a list of the membership with mailing addresses.

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SECOND NOTICE: THE APRIL 1997 SE REGIONAL MEETING IN THE EVERGLADES, FLORIDA

Jerrell James Daigle
daigle_j@dep.state.fl.us (904)878-8787

The 1997 SE Regional meeting will be held near the Everglades National Park in Florida City, Florida from **April 3-6**. We will stay at the Rodeway Inn, 815 N. Krome Ave., Florida City, Fl. 33034 and the motel phone number is (305) 248-2741. I have reserved a block of rooms under my name, so call and ask for a room. They are really big with 2 double beds and the group rate is about $36.00. If necessary, grab yourself a partner or partners and split the costs.

We have three different ecosystems to explore over 3 days. We will dredge for the undescribed endemic ***Nehalennia pallidula*** larvae in a *Eleocharis* canal, explore man-made lakes to the east, and help inventory the odonate fauna in the Everglades National Park, looking for exotic species from South America.

The common species ***Aphylla williamsonia, Arigomphus pallidus, Corphaeschna ingens, Libellula needhami***, and ***Celithemis eponina*** are expected, but we will keep an eye open for ***Crocothemis servilia, Erythemis plebja, Micrathyrias, Lestes tenuatus, Nehalennia pallidula, Neoerythromma cultellatum,*** and ***Coryphaeschna adnexa.***

Permits have been received from the Everglades National Park but I do need to submit a list of those wishing to participate in the odonate survey in the Park. If you are interested, please let me know ASAP!.

Our evening meetings will be held around the swimming pool, cabana-style. George Smolka is bringing a slide projector and screen for evening presentations. Thanks, George!

It won't snow! I can promise you that! The mosquito population is quite low at this time of the year but bring bug spray, anyway. Also, bring sun-tan lotion since some of you might want to go to Miami Beach and catch some rays! All in all, it should be a fun meeting! Who knows what new exotic dragonflies and damselflies we will find in this tropical "Sea of Grass" known as the Everglades! See you there!

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1997 DSA MEETING: SECOND NOTICE

Bill Mauffray; iori@afn.org; (352) 375-5903

The 1997 **DSA** meeting will be held **June 6-8** 1997 in Gainesville Fl. This meeting will be to honor Dr. Minter J. Westfall Jr. It will be hosted by Bill & Carol Mauffray. Access to the Florida State Collection of Arthropods and the International Odonata Research Institute collections will be one of the features. Collecting

trips to Gold Head Branch State Park and the Santa Fe River. ***Libellula jesseana*** and ***Progomphus alachuensis*** will be available for taking along with a host of other goodies such as ***Gomphurus dialatatus,*** and ***Arigomphus pallidus***.

There are many restaurants and motels within a 2 mile radius of the **IORI** and most of the collecting sites are within a hour's drive. The following cluster of motels offers a variety of classes of accommodations. They all within walking distance of one another. The area code for Gainesville is (352)

Motel 6: 4000 SW 40th Blvd @ I-75 & Sr-24 (352-373-1604) rates quoted= $27.99 single. $31.99 double +$2 per extra person

Super 8: 4202 SW 40th Blvd @ I-75 & Sr-24 (352-378-3888) rates quoted= $38.13 single $44.03 double

Ramada Limited: 4021 SW 40th Blvd @ I-75 & Sr-24 (352-373-0392) rates quoted= $54.00 single $59.00 double

SR-24 is Archer Road for those of you who remember Gainesville.

These rates are their standard rates, If we have 10 or more rooms at the later two hotels we would probably get a better rate. If enough of you all notify me by e-mail of which hotel you prefer and how many rooms you want then I can negotiate for a better price. I would need to know by 1 March 1997. Otherwise you would be on your own.

Camping is available at nearby Oleno State Park (904) 454-1853 (45 minutes from **IORI**) and also at Gold Head Branch State Park (352) 473-4701 (1:15 from **IORI**).

There is an Airport at Gainesville with Delta and US Air providing service; however much better rates are usually available from either Jacksonville (1:30 from **IORI**), or Orlando (2:15 from **IORI**) Rental cars are available at all three airports. they can be picked up at one and dropped of at another with no penalty any where in the state of Florida.

By the time you read this the Web site for the meeting should be set up. It will included useful tourist information about Gainesville and North Central Florida.

Bill is soliciting volunteers to host workshops and also post meeting collecting trips into Georgia, The Florida panhandle and/or possible into North Carolina for Ophiogomphus, etc. If interested please contact Bill Mauffray.

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THE 1997 NE REGIONAL MEETING

Paul Novak; pnovak@tnc.org; (H) 518-765-4524

The 1997 Northeast Regional Meeting will be an interstate affair as one of the target areas, the Poultney River forms the boundary between Washington County, NY and Rutland County, Vermont, at the south end of Lake Champlain. The meeting will be held **June 20-22**. Accommodations are still being looked into although we do know that there is camping available at three nearby state parks and rooms may be available at Castleton College, both nearby in Vermont. There are also a few motels in the general area.

This will be a meeting to fill gaps in species distribution and help The Nature Conservancy document the species which occur on a couple of preserves and sites of conservation interest. NOTE: Washington County, NY had a grand total of 3, species listed in Nick Donnelly's 1992 Bulletin of American Odonatology (although admittedly, Bob Barber added a number of species while working in that area in 1995), and Rutland County, VT is similarly poorly known.

We'll have several areas to explore in both states and all targeted areas should be within half an hour to one hour drive of each other. The focus for the first day will be the Poultney River itself, its adjacent wetlands, and two nearby preserves. The Poultney is a small-medium size, low gradient, meandering river with primarily sandy substrate. It is home to one of the few northeastern populations of a rare fish, the eastern sand darter, and is the focus of protection efforts of TNC. There are a couple of nice marshy/shrubby swamps associated with meanders along the river. Close to the river is the Bald Mt. Preserve. This preserve has a very

small black gum swamp, unusual for this far north, some shrub swamps and vernal pools, some of which have sphagnum. A few miles to the north is the Shaw Mt. Preserve which has a marl pond, some wet meadow/fen wetlands and vernal pools.

Targets for the second day include return visits to the above; two large (200+ acre) wetland complexes adjacent to Lake George which include extensive bog / fen habitat; and possibly South Bay Creek, a small, sandy, meandering stream flowing into South Bay at the south end of Lake Champlain.

Permits from the Vermont Fish and Wildlife Department will be forthcoming and Chris Fichtel, Director of Science and Stewardship of the Vermont Chapter of The Nature Conservancy, will be our "guide" to the two preserves and the Poultney River. Additional details will be included in the next issue, but mark your calendars now. We look forward to seeing you all and getting to know the odonate fauna of these interesting areas.

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OHIO ODONATA SURVEY MEETING

Bob Glotzhober, rglotzhb@infinet.com
(H) 614-491-2384; (W) 614-297-2633

The Ohio Odonata Survey is planning for its annual meeting for Saturday, **February 22**, 1997 at the Museum of Biological Diversity, The Ohio State University in Columbus. Maps can be sent by snail mail to anyone e-mailing a request to Bob Glotzhober at **rglotzhb@infinet.com.**

For the past four years we have tried to combine informative presentations with an afternoon field trip - usually in June. The value of each part of these meetings has created a pressure of time, which we will eliminate this year by holding a short business meeting followed by "papers" during February, and then hold several Ohio regional field trips during the Odonate flight season.

The tentative agenda includes the following items:

Voting on forming an official Ohio organization and other business -

Keynote presentation on the federally endangered Hine's Emerald, ***Somatochlora hineana***, by Tim Cashatt and Tim Vogt from the Illinois State Museum.

Introduction to the Tiger Spiketail, ***Cordulegaster erronea***, a rare SE Ohio species, by Dan Riggs who his doing his master's thesis on this species at Ohio University

Survival of Odonata larvae in Little Raccoon Creek in Southern Ohio, gleaned from his thesis research by Jan Trybula, Miami University

Odonata ID Charts from the WPA. Bob Glotzhober, Ohio Historical Society, will offer a brief presentation about hand-painted charts prepared for the OSU entomology department between 1942 and 1945 under the federal Works Progress Administration.

Dragonfly Web Sites. Dave McShaffrey, Marietta College, will demonstrate a variety of useful and interesting web sites from Ohio, Michigan, the **IORI**, and more

Best Finds of 1996. Review of the Ohio efforts this past year by Bob Glotzhober.

Identification of genus level in the Family Libellulidae. This mini-workshop by Bob Restifo, Ohio Department of Health, Vector Borne Disease Unit, will take place at the end of the meeting for those interested in staying and delving deeper. Included will be a key to the genera, adapted from keys produced by the late Donald Borror of Ohio State University.

Times: 9:00 to 9:30 arrival & registration. 9:30 - 12:00 and 1:00 - 3:00 presentations. 3:00 (time apx.) till 4:00 (or later) Mini-workshop. Contact Bob Glotzhober for more current information or to request directions etc.

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NABS MEETING UPDATE

Dan Johnson; johnsodm@access.etsu-tn.edu

from (e-mail)

I have received 14 abstracts for the **NABS** meeting **(26 - 30 May, 1997**; San Marcos TX) that focus on odonate conservation, ecology and evolution. Eleven of them are for oral presentation, and three are posters

Brian Armitage has arranged for four Special Sessions (including ours) to be scheduled on one

day and promoted as focusing primarily on topics related to biogeography, conservation, and taxonomy. I have chosen 6 of the 11 oral presentations for inclusion in a special session called "**ODONATE BIOGEOGRAPHY AND CONSERVATION**" that should fit the theme of the day very well:

DUNKLE, S.W. Problems in conserving North American Odonata.

SOLUK, D.A. Hine's Emerald Dragonfly: the challenge of applying odonate ecology to the conservation of a federally listed endangered species.

HENRIKSON, B.-I. Emergence strategies in dragonfly larvae--adaptations against fish predation?

MAY, M.I. Evolution of migratory behavior in the Common Green Darner, ***Anax junius*** (Odonata: Aeshnidae).

DONNELLY, T.W. Evolution of the ***Orthemis ferruginea/discolor*** complex as a Caribbean Rassenkreis.

GONZALEZ SORIANO, E. & G.L. HARP. Notes on the Odonata from Chamela, Jalisco State, Mexico.

These may be followed by a 15-minute discussion.

Tom Arsuffi has said we could schedule other oral presentations as a "contributed" session which I propose to call "Odonate Ecology and Evolution":

CROWLEY, P.H., F. JOHANSSON, & K. BROWN. Gender-specific life histories of damselflies.

CORDOBA-AGUILAR, A. Is fluctuating asymmetry an honest indicator of stress?: controversial evidence from damselflies.

ROWE, R.J. Site occupancy in damselfly larvae.

JOHANSSON, F. Ontogenetic reaction norms: predator-induced morphological shape change in a dragonfly larva.

PRICE, M. and J.V. ROBINSON. Jet propulsion in anisopteran dragonflies and its relationship to morphology and life style.

The three (or four) posters will be displayed at adjacent spaces during a poster session:

ABBOTT, J. & K.W. STEWART. Current status of the Odonata of south central Neactic and adjacent Neotropical biotic provinces.

OSBORN, R. and J.V. ROBINSON. Spatial and temporal niche partitioning in ***Trithemis*** species (Odonata: Libellulidae).

VALENCIA, T.G., P.T. CHIPPENDALE, and J.V. ROBINSON. Expanding our knowledge of the evolutionary relationships between *Ischnuran* damselflies.

I will let you know as soon as possible when these sessions have been scheduled. I'll also send information about registering for the meeting, as soon as the relevant NABS Bulletin appears. Thanks for your support of this enterprise. I think this set of papers will both present our science in a very good light and justify our personal decisions to attend what should be a very good meeting!

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NEWSLETTER FROM THE MICHIGAN ODONATA SURVEY (MOS)

Mark F. O'Brien mfobrien@umich.edu;
313-747-2199

(from e-mail)

I am putting together our first **MOS** newsletter, and the name of it is "**Williamsonia**." I'd like to get it out before the end of December, so if anyone has something that he or she would like to submit by e-mail, please get it to me within the next 2 weeks. [This notice is obviously too late for the first issue!]

2 Dec 1996

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CLASSIC DRAGONFLY BOOK FOR SALE

Peter Classey, E.W.Classey Ltd.
International Natural History booksellers since 1949.; **Peter@classey.demon.co.uk**

I thought you might like to know that we have just acquired a small stock of the book **'A Biology of Dragonflies'** by Prof.P.S.Corbet. 1983. Colour frontis. 6 b/w plates Hbk. The price US$47 (30) includes surface mail.

If you would like to receive our free entomology book catalogues please send your mailing address. We also issue special subject lists for which we need to know you areas of special interest.

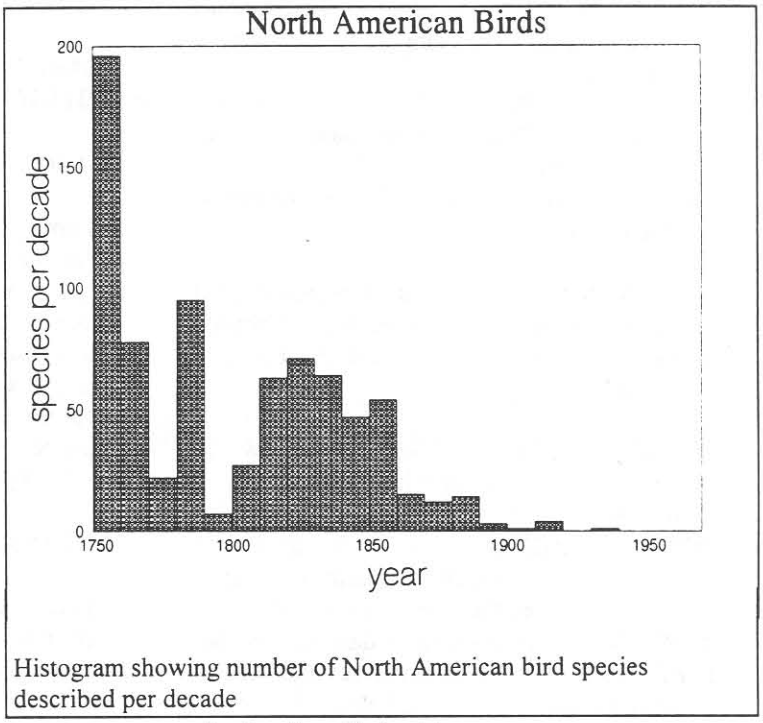
THE PATTERN OF DISCOVERY OF THE SPECIES OF NEW WORLD ODONATA

Nick Donnelly and Roy Beckemeyer

One of the most intriguing aspects of dragonfly study is that the Odonata, although as colorful and obvious in their habits as birds and butterflies, are relatively poorly known, compared, for example, with these other conspicuous organisms. People beginning their study of dragonflies often complain that there are few identification manuals available for identification of these insects. When they overcome this obstacle and actually start netting and identifying these insects, they are often surprised when they are informed that what they have taken is a new county or even state record or, as has happened recently for more than one beginning odonatist - a wholly new species. We have decided to review dragonfly study with a brief account of how, when, and by whom these insects have been discovered and described. The surprising conclusion is that this field has not reached maturity, especially in South America.

Because, like a number of other odonatologists, we began our interest in natural history with birds, and because birds are the most commonly studied natural creatures, it seems appropriate to begin this essay with a brief account of the pattern of discovery of bird species. The first figure shows by histogram the number of North American bird species discovered by decade since Linneaus' original work. The most dramatic conclusion from this figure is that bird species were discovered at a very early time. To make this even more dramatic, in the northeastern U.S., there were virtually no new birds found and discovered after Alexander Wilson's final work in 1813. After this date, only the Swainson's Warbler, Philadelphia Vireo, and Bicknell's Thrush (recently restored to species status) remained to be found! The bird species found between 1813 and 1870 largely result from the exploration of western territories, including the Pope Expedition of 1846 and the four famous post-Civil War surveys; Powell, King, Hayden, and Wheeler.

It is also worth noting that, although the North American bird species list was completed early, knowledge of the regional distribution of species was more slowly achieved. The increasing number of birders who can competently identify birds on observation has resulted in a steady increase in state and regional species lists over the years. For example, the Kansas bird list in 1956 included 375 species. Now, 40 years later, there are 441 species recorded (13 by sight records only - duly documented, of course by the state Bird Records Committee). Most of the new species have been added as a result of avocational birders putting in many more person-hours of time than could be dedicated by professional ornithologists.

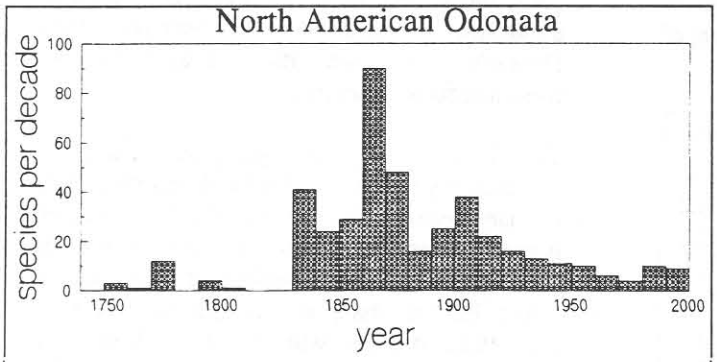


Histogram showing number of North American bird species described per decade

An additional observation contrasts the situation with odonates. When Eaton published his Birds of New York nearly a century ago he listed the collaborators who had furnished him bird distribution data for this work. The 200 names were distributed widely in the state. At present the list of people who contribute regularly to odonate distribution in New York is fewer than the fingers on one hand, and another four or five

having contributed some data recently. Yet this number is a many-fold increase over the number who contributed a decade ago! This small group has already added five species to the New York list published just a few years ago. The present increase in numbers of dragonfly enthusiasts is dramatically increasing our knowledge of odonate distribution.

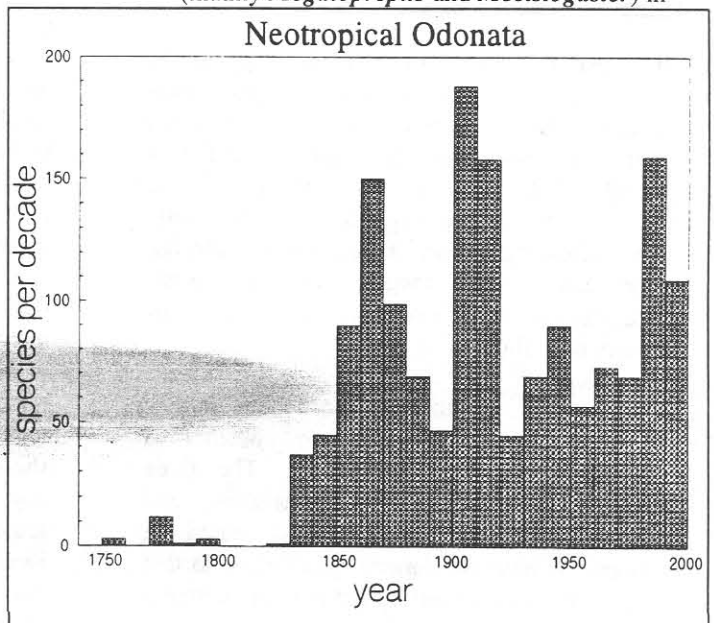
In contrast with the birds (above), the Odonata were discovered and described relatively late. The median year for North American birds is about 1790, that of Odonata (second figure) is 1907. In the New World tropics these years are about 1840 and 1913. Note that for North America, after the rush of species descriptions after 1850, the ten-year additions have decreased uniformly, indicating that a maturity of knowledge is being approached. However, the curve has by no means converged with the axis. The last ten years have been especially vigorous (12 species) and there are several species now awaiting description. The recent vigor is, of course, a reflection of the vast recent increase of interest in this group in North America. Regional distribution (both resident and adventitious occurrences) is also becoming better understood, though at a slower pace than in birding, reflecting the relatively lower number of amateurs. (Drawing again on Kansas as an example, two dedicated avocational dragonfly collectors have added 4 species to the state list over the last two years, all collected in their home counties.)



Histogram showing number of North American Odonata species described per decade

The third figure shows the number of species per decade for the New World tropics, where the picture is very different. There are two peaks, representing the Selysian monographs in the middle of the 19th century, and the vast contributions by Calvert and Ris in the early years of this century. However, in the last 80 years, the number of species per decade has been increasing steadily! This increase represents mainly the vigorous work of Santos, Racenis, Belle, and DeMarmels, but it also reminds us that this vast area has relatively few odonatists (or other entomologists), in comparison with the size of the habitat. Also, Spanish and Portuguese America never experienced the natural history study traditions of colonial and ex-colonial British, French, and Dutch territories in the Old World. A glance at this histogram emphasizes that the New World tropics is an area which has not even reached a mature stage in its Odonata study.

Dragonflies and damselflies differ among themselves in their conspicuousness, which is a combination of their color and size, and of their habits. One might guess that certain families would have attracted the attention of early collectors, who were largely butterfly and beetle enthusiasts. The first sighting of one of the giant "*helicópteros*" (mainly ***Megaloprepus*** and ***Mecistogaster***) in



Histogram showing number of Neotropical Odonata species described per decade

tropical America must have thrilled the collector who found it, and we can guess that he was probably determined to have it first in his net and then in his box. The beautiful Ruby Spots (***Hetaerina***) must have had a similar history. By contrast, many tropical damselflies are so inconspicous (***Palaemnema*** is a good example) that even experienced odonatists have returned from tropical expeditions with no specimens. The following table shows the progress of discovery, arranged according to the families of New World Odonata the number of species, the year of discovery, and the year in which the median species was described. The table is arranged according to the last statistic.

family	N	1st species year	median year
Pseudostigmatidae	24	1773	1864.5
Calopterygidae	67	1773	1869
Polythoridae	56	1842	1881
Corduliidae	94	1839	1892.5
Lestidae	48	1839	1892.5
Aeshnidae	143	1758	1908
Libellulidae	402	1758	1908.5
Coenagrionidae	404	1834	1909
Megapodagrionidae	109	1862	1918
Protoneuridae	85	1842	1919
Platystictidae	42	1773	1931
Gomphidae	364	1839	1942.5

Note that the two families (Pseudostigmatidae, Calopterygidae) with especially conspicuous species stand out with very early median dates (some 60 years before the median for the New World Odonata as a whole). The pseudostigmatids are huge and breath taking. The calopterygids are spectacularly colorful, most have wide ranges, and all perch conspicuously along stream courses. And most species were found long ago.

The next three families, the corduliids, lestids, and polythorids, also contain many conspicuous and fairly wide ranging species. The three median families (aeshnids, libellulids, and coenagrionids) are very large and would be expected to have their median date close to that of the order as a whole; indeed they fall within 5 years of that date.

The next three families (megapodagrionids, protoneurids, and platystictids) consist of very shy species which are easily overlooked by collectors. Many of the species also have restricted ranges. The megapodagrionids contains several especially cryptic genera (such as ***Philogenia***). The protoneurids are very colorful, but contain many slender, almost needle-like species, which are both surprisingly difficult to see in the gloom of tropical forests and difficult to net as they fly close to the water surface. Platystictids consist of one New World genus, ***Palaemnema***, which generally lives deep in the bushes along tiny tropical forest streams. It is a determined collector who risks the scratching of the branches and the always possible ambush by a lurking fer-de-lance or rattlesnake (Nick Donnelly has run into both when trying to catch these insects with his fingers).

The final family, the gomphids, have an astoundingly recent date for the description of its median species: during World War 2! The reason is easily understood: this family has many species with cryptic habits, especially in the tropical forest. Further, many of the species have very brief flight periods, with a synchronized mass emergence and a fairly short life span for the adults.

THE FUTURE - THIS IS STILL AN ERA OF DISCOVERY!

We cannot predict the total number of species, but the above analysis shows that we can expect very many new species to be found, especially in the tropics. A consideration of the family tabulation suggests that a great many of the remaining undescribed species will be found in the three "shy" damselfly families, and, of course, the gomphids. The major families will contribute their share, but we would predict that relatively few calopterygids and almost no new pseudostigmatids will be discovered. Very likely there is another factor to be considered, and that is the relative coverage given in the past to a relatively few areas and habitats in the tropics. A look at dot maps in older systematic publications show very few dots representing specimens (of any group) collected, for example, in the vast grasslands of southern Venezuela and adjacent Brazil and Guyana. Easy access to this huge area only began in the last few decades and many new species have been found recently. There are still large areas even of Central America which have been almost completely uncollected (eastern Honduras, for example). The early collectors

(before 1900) concentrated on an astonishingly few areas in the tropics. When one of us compiled a list of Odonata in the vicinity of the Panama Canal Zone he was astounded to find how few specimens (let alone species) had been taken in this area before the actual construction of the Canal.

The conclusion is obvious: Odonata are *still* largely undiscovered and unnamed, especially in the tropics, but even right here in North America. Furthermore, their distribution is certainly far from well-understood. Part of the charm and attraction of these insects is that our state of knowledge is still so primitive that we can all participate in discovery. Those of you who fret because Peterson-style manuals have not been available can take some heart from these figures. If such a manual had been published at the time of the first Peterson (in the 1930's), already literally dozens of North American species would have to be added to it! As people with finely honed visual identification skills move on to dragonflies from birds, they will undoubtedly add to our ability to identify on sight some of the odonate fauna. The fact that many Odonata will still have to be identified under a microscope adds a level of difficulty to the thrill of the chase and the hunt: they have to be netted and then laboriously keyed out in order to be recorded! (To draw an analogy with the lepidopterists and ornithologists, odonatologists can't simply stick to the "butterflies" and ignore the "skippers" or stick to the "ducks" and skip the "shorebirds".) Whatever your level of interest in dragonflies and damselflies -- discovery is for everyone - get out there and make some!

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TRINIDAD THENS AND NOWS

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Sorry, I've been busy.

Since the last time I've written about the Caribbean island of Trinidad, I've been back two times -- once with Al Barlow in June 1994 and again with Mike and James May in July 1996.

As many of you know, my first visit to Trinidad was in 1983 and I've been returning almost every year since then. At one point I was married to a young lady from that country but those days are gone. So the island does hold a certain amount of sadness for me. When I visited with Allen in 1994 it was meant to be my farewell trip, and I really didn't think I would ever see the place again. So when Mike called in 1996 and suggested a one-week visit with his son James, it was not too lightly that I ultimately decided to go back.

I'm a high school teacher, and Mike's a college professor, so before the school year draws to a close we're both thinking about excursions that must be put off until June, July and August. In addition to being Mike's son, Jamie is my god-son, and the three of us make a fairly merry band. Jamie had been with Mike to Arizona and New Mexico the previous summer, and also went with Mike and Leslie to Europe that August. I think he'd also been to Panama. So one day in April or thereabouts, Mike gave me a call and said, "Listen, Jamie's got the travel bug and we thought maybe you'd be interested in showing us around Trinidad for a week or five days."

If he had asked me a year earlier I don't think I could have done it. But I felt surprisingly good about the idea, and I thought it might be good for me to go ahead and do it. I was still broke though, from the expenses incurred during my trip to PNG in '94, and I was still hoping to go back there in '97 (right now I'm shooting for a return trip to PNG in 1998). So I reluctantly told Mike that I needed to save my money for next year.

Well, one fringe benefit of visiting the same island for thirteen years is that you really know how to do it on the cheap. This had been part of Mike and Jamie's plan, actually. Trinidad for me is, among other things, a great, inexpensive way to visit a rain forest for a week or two. With all the things I *don't* know how to do very well, I *definitely* know how to do Trinidad. Mike said he'd be happy to cover my air fare if I'd be willing to kind-of be their tour manager. And who could refuse an offer like that?

I'm not going to make a long story much shorter here, but the fact is when my marriage dissolved most of my contacts went with it. For the first time since 1985 I found myself at the mercy of Trinidad's tourism industry (Yuck-o). The trip ended up costing a lot more than we had hoped, for example: When in the outback I normally stay in the Arima Valley's tropical research station, called Simla. Simla used to run about fifteen dollars a night. One this trip, Simla was closed for repairs, and the only suitable alternative was to stay at the plush Asa Wright Nature Centre. Asa Wright is absolutely breath-taking. You are pampered in absolute luxury, yet you are buried in thousands of acres of upland rain forest. Everything you came for is two steps outside the door to your bungalow. But the price is steep: eighty U.S. dollars per person, and Asa Wright makes no special deals for groups or extended stays. So Mike and I were now looking at, not $45.00 per night, but $240 per night for the three of us. ¡Caramba!

In the end we took what we thought was the intellectual high road: If the Great Odonate in the Sky says we must pay five times what we had planned, then it's simply up to us to get five times the fun out of it. This is what we proceeded to do.

Trinidad, like any other country, has its good and bad points. If you've been back and forth to a place for thirteen years, you've seen a lot of both sides. But, as on my trip with Allen two years earlier, Trinidad put on its best show and really gave Mike, Jamie and myself one hell of a ride. Mike had been once before, with me and Caroline, and back then he stayed in a rented room in my family's neighborhood, where he got a pleasant taste of what guide books call "the local color." So he had a decent idea of what Trinidad was all about. For Jamie it was all pretty new.

We hiked the rain-forest trails, visited a deep grotto that is home to a colony of Oilbirds, splashed in mountain streams, sipped rum punch on the veranda while spying on parrots, toucans, hummingbirds, and even an Ornate Hawk Eagle. We took a special road-trip to see baby Leatherback turtles hatching out of the beach. We visited the desert-scrub of the Aripo Savanna, and took a flat-bottomed boat through the mangroves of the Caroni Swamp, where we watched small flocks of Scarlet Ibis fly in from Venezuela for their night's rest. We went to Sunday market in Arima, at the foot of the valley, where everything from fish, live crabs and poultry, a dazzling variety of fresh produce, to live turtles and songbirds, and even hand-made shoes, were being sold. In a country where crime is "supposed to be" skyrocketing, in the crowded marketplace Mike had unwittingly been walking around with his backpack wide open, and nothing came of it except that a tradesman hollered across to Mike that he should close his backpack. You couldn't have felt safer or more welcome, yet Trinidad is definitely *not* a tourist island. Which probably explains why people are so good to you -- outsiders are still pretty much of a rarity here.

One of the great experiences we got to enjoy several times was "getting a drop" which is Trini slang for hitching a ride on the curvy mountain roads. Up in the hills people are extraordinarily outgoing and kind to strangers, and I was hoping that Mike and Jamie would have the opportunity to enjoy this first-hand. Almost every day we took long hikes around the valley, and the return trip would have been an arduous two hours uphill, but I don't think we ever had to do the whole thing unaided. There was always somebody who would offer us a lift in the payload of their pickup truck, or even inside their sedan -- and we weren't usually the tidiest of passengers by that time of day. Back at the Nature Centre a warm shower (or a dip in a mountain pool), some fresh fruit, and a cool rum punch awaited our return. Now *this* is the way to visit the rain forest!

In between all of this, of course, we managed to collect some odonates. Mike, do you remember what we got? I've been back and forth so much that I hardly keep anything anymore. So, while I know we didn't actually collect all of these species on this particular visit, here are some of Trinidad's entomological highlights for the rest of you:

In non-odonate groups, there are enormous, metallic-blue *Morpho peleides* butterflies and *Dynastes hercules* beetles, tarantulas, harlequin beetles, thorny winged stick insects, army and leafcutter ants, and a terrific variety of impressive butterflies and moths.

I remember a night in 1984 when two collectors from the Cincinnati Insect Zoo let me go on their nighttime permit to visit a floodlit communications tower that overlooked three rain-forested valleys. All they wanted was beetles, and they said I could have anything else I saw. In one hour, using a syringe filled with isopropyl alcohol, I collected

hundreds of Saturniid and Sphingid moths, in more than sixty species! One *Rothschildia* moth was similar to, and actually *larger than*, the Asian *Attacus atlas*, the so-called "world's largest moth." Some of the Sphinx moths were almost ten inches across. There were also many species of eye-spotted *Automeris* moths, and large "black witch" and even larger "white witch" noctuid moths. The "white witch" moth is said to have the broadest wingspan of any insect, and the one I caught was slightly more than a foot across! There were no odonates attracted to these lights (though several aeshnids in Trinidad are commonly caught this way), but it was nonetheless one of the hallmark insect experiences of my life.

Trinidad's odonates are no disappointment, though it takes several visits to get a really wide variety of them. There are about 130 species recorded from the island. I remember Sid Dunkle and Jerrell Daigle coming down for a week, and I think we got about seventy-five species on that occasion. If you've been to Ecuador or Venezuela, then Trinidad probably won't be your next hot-spot. If, however, you are looking for a "first tropical adventure," then I could hardly imagine a better place to begin, especially when one considers the accommodations at Asa Wright, and also that Trinidad is an English-speaking country. If you're an experienced tropical adventurer, Trinidad makes a splendid "easy holiday" if you just want to get away from North America. And the bird-watching is definitely spectacular (applies to all connotations).

The University of the West Indies probably still has many copies left of *A catalogue and guide to the Dragonflies of Trinidad*, which is a simple, unadorned manual by yours truly (1988). (It used to be about $10.00 U.S. postpaid, but write for a current price to: Dr. Mary Koo, Zoology Dept, University of the West Indies, St. Augustine TRINIDAD, WEST INDIES. All proceeds go to covering production and mailing costs. They also have several fine manuals on other aspects of West Indian flora and fauna.)

As I've said, there are about 130 species of odonates in Trinidad. Five species of ***Argia*** are known from the island (***insipida, oculata, orichalcea, translata,*** and ***pulla***). ***A. insipida*** is a magnificent sky-blue species, while ***orichalcea*** is one of those bright coppery-red species with flaming red eyes. There are three species of the interesting coenagrionid genus ***Acanthagrion***, 2 ***Aeolagrion***, 3 ***Lestes*** (including the unusual, tiny, savanna-living ***L. mediorufus***), and 3 weird ***Metaleptobasis***. Among my favorites are the gorgeous protoneurids, including 2 ***Neoneura*** and 2 ***Protoneura***. ***P. tenuis*** is my hands-down favorite Trinidadian odonate, with zinc-white thoracic sides and a flaming, metallic-red thoracic dorsum, and a black abdomen so long and thin, with a slightly clubbed apex, that it looks like a very thin sewing-machine needle. Mated pairs of these are truly spectacular (if you manage to spot them in the first place, since in spite of all I've said they are rather cryptic in the wild!) There are two ***Hetaerinas: occissa*** **and** ***caja***. And let us not forget Trinidad's sole member of the Pseudostigmatidae, the excessively large ***Mecistogaster ornatus***, which breeds in tree-holes and empty brazil-nut shells.

The Anisoptera include the libellulid genus ***Zenithoptera***, which are smallish, floppy dragonflies whose wings are entirely metallic blue-black, and they land with these wings closed above their backs like *Heliconius* butterflies (which are also common in the same habitat). These, and many other peculiar Trinidad odonates, are found most commonly in the Aripo Savanna. The Savanna is also home to the gigantic aeshnid, ***Staurophlebia reticulata obscura***, almost 100 mm from tip to tail, which can be spotted cruising slowly down shaded, nearly-dry clay-bottomed gulleys, like some enormous green ***Boyeria vinosa***. Also found here is the unusual red-tailed gomphid, ***Aphylla producta*** (which also comes in a sooty-black color-phase). Trinidad is extremely gomphid-poor, and the only other known species are ***Phyllocycla anduzei, Phyllogomphoides cornutifrons***, and a green species of ***Progomphus***. See Jerrell for details.

As for aeshnids, apart from ***Staurophlebia***, Trinidad boasts five ***Triacanthagynas***, four ***Gynacanthas***, two ***Coryphaeschnas***, one ***Anax***, and (all together now) A PARR-TRI-YUDGE IN A PEARRRR TREEEEEEEEE!

Savanna libellulids include ***Rhodopygia hollandi*** and ***Planiplax phoenicura***, both bright red fellows, and several species of ***Orthemis***, including a few that Mssrs. Donnelly and Machet are trying independently to untangle. There is also the corduliid-looking ***Idiataphe amazonica***, and the genuine corduliid ***Aeschnosoma forcipula***,

which I believe is the only corduliid recorded from the island.

Of ***Trameas*** and their relatives there are several: ***T. abdominalis, binotata, calverti,*** and ***cophysa***; ***Tauriphila australis*** and ***argo***; ***Tholymis citrina***; ***Pantala flavescens*** and ***hymenaea***; and ***Miathyria marcella*** and ***simplex***.

Odd libellulids flourish in the lowland streams. ***Anatya guttata, Elga leptostyla*** (when you can find it!), 6 species of ***Erythemis*** (***credula, haematogastra, mithroides, peruviana, plebeja,*** and ***vesiculosa***, each as different from the last as can be imagined); 9 species of ***Erythrodiplax***; ***Macrothemis hemichlora*** and ***pumila***; the tiny, tiny ***Nephepeltia phryne***; ***Oligoclada walkeri***; 4 species of ***Perithemis*** (***domitia, electra, mooma***, and the microscopic, brown-spotted ***thais***); 9 species of ***Micrathyria*** (some more common in the mountains); and two species of ***Uracis*** help to fill out the picture.

In mountain streams, the libellulids ***Brechmorrhoga nubecula*** and ***praecox*** (plus a third species that we're still working on); 3 species of ***Dythemis*** and ***Elasmothemis***; ***Macrothemis imitans leucozona*** and ***pseudimitans*** join the ***Argias***. In sunny, upland seepages ***Dasythemis esmerelda*** can be found sparingly, but with some regularity.

This isn't everything, but it's most of it. The species list has some interesting omissions. Nick keeps asking me where the ***Palaemnemas*** are hiding, but I don't think Trinidad has any. Nor do there seem to be any ***Heteragrions***. For people versed in Neotropical odonates, these two genera, or their relatives, would be expected. But after thirteen years or trooping high and low, I think I'd have bumped into one by now if they were there. Maybe they just never reached Trinidad; maybe in the eighteenth- and nineteenth centuries the mountains were so thoroughly cut over that, even though the forest looks pretty lush today, these forest Zygopterans were wiped out and never recolonized.

In reflecting over my Trinidad years, and thinking about bug-hunting stories, one sequence of events in particular keeps coming back to me. Allen Barlow and I were visiting in 1994; my marriage was over, and I was visiting the country (and my family) for what I felt was the last time. In (at the time) eleven years, I had seen the worst of Trinidad as well as the best of it, and I was hoping that Allen's first visit to the island would be mostly filled with good things.

On this trip, as on most of them, there was an unemployed cousin who drove us around in exchange for a daily stipend. There's *always* someone in Trinidad who can use the money and who owns a car; and it's not a good idea to rent a car in Trinidad, because you can't really leave it unattended on the side of the road; so the cousin-as-driver was a happy alternative for both parties.

So Ronald was driving me and Al south along the east coast, through a lovely plantation of coconut palms. As usually happens, he noticed some friends of his (all guys who worked at Piarco International Airport) having a cook-out on the beach. Ronald slowed down to chat for a minute.

Now I have to tell you that almost all of my Trinidadian family and friends are of East Indian or African descent. Trinidad's minuscule white population is mostly of English ancestry, and while these people by no means control most of the power positions in Trinidad, it is still true that most white folk on the island are fairly uptight, aloof stuffed shirts who firmly *believe* in their aristocracy, even if no one else seems to notice or care anymore.

The point is that this state of affairs always worked in my favor, since non-white Trinidadians were always pleasantly surprised by my unassuming manners, when juxtaposed with the sort of white folk they are more accustomed to. You don't see white Trinidadians on the bus, for instance. You don't see white Trinidadians at the beach, unless they arrive in herds for special events. And then they bring folding chairs and tables and silver tea sets. You get the idea.

But Ronald didn't really know me that intimately, and as he spoke with his buddies he seemed anxious to cut the conversation short, so that he wouldn't hold us up. He figured Allen and I were in a hurry to get to a swamp or something. But short conversations and simple, unaffected pleasantries are not Trinidad's style, and Ronald's pals were trying to get us to join their cook-out, and we convinced Ronald that we were happy to oblige.

So, instead of racing off to the collecting grounds, Allen, Ronald, and I spent a few hours sitting in the shade, drinking rum-and-cokes, barbecuing chickens, and trying to learn the local card game ("All-fours", which has been completely beyond my comprehension for thirteen years and this will never change). And then, when the spirit moved us, the three of us set off, slightly drunk, to our odonatological destination, where we clambered over mangrove roots in a dangerously inebriated state. Later we caught bugs.

The days passed quickly and soon it was time to leave the island. Glad for the nice week we had enjoyed, I was still profoundly saddened to say my final farewells to my in-laws and to be looking across these familiar landscapes for the last time. Allen tried to think of something that he could say or do for me, as Ronald drove us the last ten miles to the airport, but there was nothing to be said or done.

After the usual airport formalities, Allen and I grabbed our carry-on baggage and walked across the tarmac to the rolling staircase at the plane. At the last possible moment, we heard a shout from under the 747. The guys we had met at the beach were loading the baggage for our flight! They ran over and squeezed our hands and wished us well on our journey. They said they hoped everything was good during our visit. We had a few laughs together and then Al and I got on board.

That was a fitting farewell for what I thought was my last moment on this terrific island.

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ADDITIONS TO KANSAS ODONATA RECORDS FOR 1996

Roy Beckemeyer & Ragan Todd; royb@southwind.net

(from e-mail)

This has been a good year for collecting in Kansas. In addition to the first record of ***Brechmorhoga mendax*** for Kansas (Sedgwick County) which was reported in the August issue of **ARGIA** (Beckemeyer, 1996), records of three additional species occurrences are documented here. All three were collected by R. Todd in Crawford County, southeastern Kansas: ***Tramea carolina***, ***Dythemis velox***, and ***Celithemis verna***. These specimens were taken in 1994 and verified by Sid Dunkle in 1995. Voucher specimens of all four of these new records have now been deposited with the Kansas Biological Survey Collection in Lawrence, KS.

Tramea carolina had been reported by Kennedy (1917) for Clark & Pratt Counties, but the Clark County specimen was determined by D. Huggins (1978) to be ***T. onusta***, and the Pratt County material could not be round, so Huggins had listed this species as unsubstantiated. This record confirms ***T. carolina*** as a valid Kansas species.

Celithemis verna adds a fourth species to the list of Kansas ***Celithemis***. ***Both T. carolina*** and ***C. verna*** were taken at one location: a pond about one mile east of the Pittsburg, KS city limits on private land. The pond consists of a series of small pits clumped together. There is a profusion of emergent vegetation and submerged mosses and plants. The pond is at one end of a tall grass meadow which is in turn surrounded by tall oak trees or high mounds of overburden, creating a somewhat sheltered habitat.

Dythemis velox has been observed at several of the "Mined Wildlife Areas" surrounding Pittsburg, KS (these are reclaimed strip pit mines). ***D. velox, D. fugax, Gomphus graslinellus, G. militaris, Anax longipes,*** and ***C. fasciata*** have been observed there. The ***A. longipes*** record is of interest as that species had previously been recorded only in Jefferson County (Huggins, 1983). The Odonata fauna of these unique old ponds is worthy of continued study and exploration.

Celithemis fasciata, previously recorded only for Crawford County (Huggins, et al, 1976), was collected by Roy Beckemeyer at Woodson County State Lake. As noted previously (Beckemeyer, 1995), the Odonata of the Woodson County State Lake area is quite interesting, with the only record of ***Somatochlora ozarkensis*** outside the Ozarks documented here by Huggins (1978). Along with ***C. fasciata, C. elisa*** and ***C. eponina*** were recorded for this location for the first time this year as well. This is another area that begs for careful season-long study.

Other County records noted in 1996 include:
COFFEY County (Roy Beckemeyer): ***Epitheca cynosura.***

CRAWFORD County (Ragan Todd): ***Dromogomphus spinosus, Macromia taeniolata, Libellula cyanea, Libellula deplanata, L. flavida, L. vibrans, Sympetrum ambiguum, S. obtrusum, S. occidentale fasciatum.***

LYON County (Roy Beckemeyer): ***Macromia illinoiensis.***

SEDGWICK County (Roy Beckemever): ***Lestes rectangularis, Argia sedula, Enallagma exsulans, Aeshna constricta, Sympetrum ambiguum.***

It is worth noting that the new state records were documented by regular collecting within the respective home counties of the authors. This leads us to believe that there are likely more records to be documented for Kansas if we can increase the number of collectors in the state.

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NEW AND INTERESTING RECORDS FROM TEXAS AND OKLAHOMA

John C. Abbott

The current list of Texas Odonata stands at 196 species (approximately 46% of the entire US fauna).

I have recently discovered a number of unpublished new and unique records for Texas and surrounding states that I thought would be of interest to the readers of **ARGIA**. These include three new US records; eight new state records for Texas and one for Oklahoma. Although some of these records have been mentioned in previous issues of **ARGIA**, for completeness, they are included here as well. These records and other range extensions follow:

Acanthagrion quadratum Sélys. TEXAS, Val Verde Co., Devil's River, Donlan Falls Area, 18 May 1993, 1 ♀, ANSP Collection. Northern range extension.

Aeshna psilus Calvert. TEXAS: Cameron Co., Brownsville, 10-13 March 1979, 1 ♂, TAMU Collection. TEXAS: Comal Co., New Braunfels, Landa Park, 19 October 1975, FSCA Collection? (Specimen can not be located). New for the US.

Gomphus exilis Sélys. TEXAS: Nacogdoches Co. Beatty unpublished manusript. New for TX and western range extension.

Epitheca (Tetragoneuria) semiaquea (Burmeister). OKLAHOMA: Latimer Co., 13 April 1968, 1 ♂ 1 ♀; OKLAHOMA: Love Co., Stewart farm, Thackerville, 3 mi SE, 26 March 1995, 3 ♂, and 24 April 1994, 1 ♂, UNT Collection. New for OK.

Somatochlora georgiana Walker. TEXAS: Titus Co., Mt. Pleasant, June 1950, GHB Collection. New for TX and western range extension.

Somatochlora margarita Donnelly. TEXAS: Anderson Co., Engeling Wildlife Management Area, 2 mi W of Blackfoot, 12 June 1994, 1 ♂, UNT Collection. TEXAS: "East Texas between

Shreveport, LA and Dallas, from auto radiator" 7 August 1954, 1 ♂, GHB Collection. New for LA and northern range extension.

Dythemis maya Calvert. TEXAS: Presidio Co. Big Bend Ranch SNA, Falls, Cueveas Amarillas, 28 July 1995, 3 ♂♂ at UTA Collection, 1 ♂ at UNT Collection, 1 ♂ at SWD Collection. New for US and northern range extension.

Micrathyria didyma (Sélys). TEXAS: Hidalgo Co., Bentsen State Park, 1 ♂, CSU Collection. New for TX.

Sympetrum illotum (Hagen). TEXAS: Jeff Davis Co., Lympia Spring above Davis Mountains Resort, 1730', 22 May 1993, 1 ♂ at UTA Collection. 1 ♂ at UNT Collection. New for TX and eastern range extension.

Tauriphilia azteca Calvert. TEXAS: Kleburg Co. Kingsville, 8 June 1960, 1 ♂, FSCA Collection. New for the US and northern range extension.

Tramea insularis Hagen. TEXAS: Brewster Co. Rio Grande Village Nature Trail, May 1995, 1 ♂, Big Bend Collection. New for TX. [already noted in previous **ARGIA**]

Institutions are abbreviated as follows: Academy of Natural Sciences of Philadelphia (ANSP), Beatty Collection at Pennsylvania State Univ. (GHB), Colorado State University (CSU), Florida State Collection of Arthropods (FSCA), S.W. Dunkle Collection (SWD), Texas A&M University (TAMU), University of North Texas (UNT) and the University of Texas at Austin (UTA).

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NOTES FROM WASHINGTON AND NORTH CAROLINA

Dennis Paulson; dpaulson@mail.ups.edu
(from e-mail)

Washington: The summer's odonate searching is going pretty well, with about as much good weather as we can expect. No cosmic discoveries, but lots of new county records and extensions of flight dates and elevation records.

Actually, there was one cosmic discovery, although I don't know what to make of it yet. A few days ago I decided to look through my unidentified female damselflies from North America, to take advantage of the new damselfly book, when I discovered 2 female ***Lestes*** that I had collected 20 years ago in southwestern WA and not identified. I had forgotten all about them, and now I really realize I can't identify them! They aren't any of the four Washington species, nor are they ***stultus***, the next closest species to the south. They are much like ***forcipatus***, in fact, large and with huge ovipositors, but they differ from ***forcipatus*** in having larger dark areas on the rear of the head and a dark spot on either side of the metepisternum (not as large as in ***congener***, but like some extreme ***disjunctus***).

That species isn't known from anywhere near here, but I wonder if it could be an isolated population of it, sort of like the situation with a few other species that seem to be virtually absent from mid-continent and then turn up in abundance again out here. If it is ***forcipatus***, it has clearly diverged from eastern populations. Unfortunately, I have no males, and even worse, not long ago a carload of us drove by the very pond at which I got them and decided not to stop there, as it was newly fenced (I looked at the specimens just a few days later). I've gotta get back there right away!

North Carolina: Parenthetically, I also unearthed a male ***Enallagma*** from North Carolina that I hadn't been able to identify previously. With closer scrutiny, it seems to be a member of the ***davisi / laterale / recurvatum*** group but isn't any of them; perhaps a hybrid (I'll be conservative rather than describing a new species). And a female ***Enallagma*** from California with the mesostigmal laminae of ***carunculatum*** but with an entirely pale 8th segment, something I've never seen. No wonder I couldn't identify some of these specimens long ago, no matter how hard I tried. I wonder how many unidentified specimens there are kicking around that actually represent something of great interest!

Aeshna and ***Sympetrum*** and ***Lestes*** dominate now, a sign the season is winding down; sigghh. 31 Aug 1996

NEWS FROM BRITISH COLUMBIA

Syd Cannings;
SCANNING@fwhdept.env.gov.bc.ca

(from e-mail)

I didn't get out much d'flying this past season (or the past several, for that matter), but I did swing a net a few times. Although the following aren't new provincial records, they do fill in large gaps (larger than most states) in our provincial distribution.

Libellula (Plathemis) lydia: Tobacco Plains, near Roosville, BC [1 km N of Montana border, Kootenay River (now Lake Koocanusa) valley]. 25 June 96. Pairs mating and ovipositing at several small rangeland lakes/ponds.

Libellula pulchella: ditto, not as common as L. lydia; only 3 males seen at one pond.

Here are a couple of highlights from 1995, all new regional records:

Horrible weather plagued us in July but we did manage to find three new sites for ***Somatochlora cingulata*** in the Rocky Mountain Trench region near Golden, BC (only two previous records for the entire province), as well as an exuviae of ***Aeshna tuberculifera*** at one of those sites (Blaeberry River, Donald, BC). Further south in the Trench at the tiny village of Brisco I found an adult ***Cordulegaster dorsalis*** in the collection of the nine-year old son of a friend, and he took me to the creek nearest his house.... and there were the larvae! A first record for the region (only one previous record in the interior of BC).
17 Dec 1996

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ENALLAGMA BASIDENS NEW FOR CONNECTICUT

Bob Muller has recently written me that he has taken ***Enallagma basidens*** in Connecticut. The locality is Devon Park Pond, Milford CT, and the date is 16 Sept. 1996. He says that the pond is about 500 by 250 feet and has remained essentially unchanged for 60 years. He has also taken ***Ischnura ramburi*** and ***Libellula needhami*** there. Dave Wagner at the University of Connecticut has confirmed the identification. This is the first record from New England for this species, which has been spreading northward during this century.

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1996 MIGRATION NOTES FROM FORT TILDEN

Steve Walter

In the wake of the dragonfly migration study that I did at Fort Tilden, New York in previous years, I had hoped to continue watching dragonflies there. The reasons: a good dragonfly flight is fun to watch and you never know what you're going to get. In the summer of 1996, I had the opportunity (favorable winds on the weekend) to experience two spectacular days on which several records were not only broken, but smashed. These were 27 July and 10 August. For site details and methods, refer to **ARGIA** Volume 8 Number 1. The results were as follows.

1412 dragonflies were counted on 27 July. Highlights included (old daily highs in parentheses for comparison) 722 ***Epiaeschna heros*** (151), 23 ***Libellula semifasciata*** (9), 8 ***Libellula vibrans*** (2), and 512 ***Pantala hymenaea*** (164). In addition to the above species, ***Anax junius, Libellula pulchella, Pachydiplax longipennis, Pantala flavescens, Tramea lacerata,*** and ***Tramea carolina*** were recorded and preceded the previous early date for migration at Fort Tilden. (Some suggestion of migration was in evidence earlier still, on 21 July). On 10 August, 2306 dragonflies were tallied. Featured were 754 ***Epiaeschna heros*** (151), 990 ***Libellula pulchella*** (155), 23 ***Libellula semifasciata*** (9), 29 ***Libellula vibrans*** (2), and 2 ***Libellula lydia***. This was the first time that ***L. lydia*** was noted. Both individuals recorded were the unmistakable mature males. Who knows how many females went undetected among the numerous ***L. pulchella*** females?

Unfortunately, the rest of the summer was without good cold fronts and active northerly winds on a weekend. This hurt the chances of sampling the numbers of ***Tramea carolina***, thought to be having a good year. There was a weak front on 24 August, and it produced 15 ***T. carolina***, exceeding the previous daily record of 11. However, on 8 September, I counted 36 individuals several miles to the east at Bayswater Point State Park. This was a stop over on their

migration route, not an association with water. The dragonflies were observed mostly perched in a few trees, at the tips of bare branches about 30-50 feet high. Of added interest, they were all facing the same direction.

I'm not an authority on this, but I'll go out on a limb and say that the ample rains of 1996 were beneficial to the breeding efforts of, particularly, the vernal pond species. The case of ***Epiaeschna heros*** is especially interesting to note. For most of the summer of 1996, the species was rather scarce in the New York City and Long Island areas. In contrast, it was common during the summer of 1995. During southward migration, however, it was much more numerous in 1996 than in the drought affected 1995. Again, I'm no expert on their biology, so I'm guessing on the basis of what I see. Would it be correct to deduce that the numerous adults migrating south in 1996 came from eggs layed around drying ponds in 1995?

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ODONATES IN WESTERN MASSACHUSETTS

Dave McLain; Stylurus@aol.com

I've had some grants to do survey work for mussels the past few years and usually combine that with a little odonating. I have associated ***Stylurus scudderi*** (MA endangered) with sandy streams where rare mussels also occur. In August and September of this year, I have added 3 new sites for ***S. scudderi***, Bachelor Brook and Stony Brook in South Hadley and the Mill River in Hatfield. All sites were sandy with some riffles. The 2 rivers I found it in in 1995 were also similar, the Manhan River in Southampton, and the Fort River in Amherst. I also found ***Stylurus spiniceps*** in the canals in Holyoke. With Fred Morrison and Laurie Sanders, we found ***Boyeria grafiana*** on every branch of the Westfield River.

21 Dec 1996

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SEEKING ONTARIO DATA

Matt Holder, holder@netcom.ca
(from e-mail)

I am currently working for the Ontario Natural Heritage Information Centre compiling past and present Odonata records. The records will be entered into the newly formed Ontario Odonata Database, housed in the computer system at the ONHIC. The location data will then be used to create distribution dot maps for each species, and old and new (say, pre-1950 and post-1950) distributions will be compared to determine any apparent change over time; this will be most useful for such species as ***Enallagma civile*** and ***Celithemis elisa*** where a range change has been noted by numerous observers. I am asking observers with Ontario records to submit them to me by the end of January so that they may be entered into the database, as the final report, of which a free copy will be sent to each contributor, is due by early March. I would like each record to include the species, date, location and its UTM (if know; if not then please provide a good description of the location so that a UTM can be derived), the age of the map used if a UTM is provided, the disposition of the specimen and its catalogue number if it has one, the name of the observer, and any notes attached to it (e.g. its gender, behaviour, habitat, etc.). I know that it is a lot to ask in a short time (a restriction imposed on me, as I was only asked to begin this project at the beginning of November), but all contributors will be fully acknowledged in the report (which will include all distribution maps and some species accounts of the rarer species, as well as other geographical and methodological text, all of which will hopefully spur on odonatists that notice the gaps in our knowledge of species range, etc.). Also, besides receiving a free finished report, the contributor will have added to our present knowledge of Ontario Odonata, shedding more light on (as Raymond Hutchison has put it) one of the richest odonate faunas in northeastern North America.

Submissions may be sent via mail to: Matt Holder, Ontario Natural, Heritage Information Centre, P.O.Box 7000, Peterborough, Ontario K9J 8M5.
Faxed submissions may be sent to: (705) 745-5575.
Or emailled to: Holder@netcom.ca

If records are computerized, then it is preferable if they are sent digitized on disk. Contact me through any of the above means, or by telephoning (705) 799-1624 to determine whether this can be done.

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NEWS FROM VIRGINIA

Steve Roble; sroble.dcr@state.va.us
(from e-mail)

There were no new state records in Virginia this year, but here are the best records that my staff and I documented in 1996:

Stenogomphurus consanguis - I spent 2 days surveying for this species in mid-June, attempting to extend its range north or east from the seven new sites that Dirk Stevenson documented last year. I didn't look for any additional populations within the area circumscribed by Dirk's sites based on the assumption that more exist in this area (I'll seek them next year). I only managed to find one new population this year. It's in Russell County along a small stream near the Clinch River and is 23 km N of the nearest previously known site. Yet another new northern range limit for this species. I also documented ***Stenogomphurus rogersi*** at 2 new sites during the course of these surveys.

Enallagma pallidum - Chris Hobson of my staff reconfirmed this species at Lake Drummond in the Dismal Swamp, the only historical site in Virginia (originally documented in 1938 but not collected there since to my knowledge), and also discovered a second population along a stream 25-30 km away.

Ischnura prognata - Chris, Dirk and I found this species at 6 or more new sites this year, including several that represent county records. The first discovery was a new early date (April 22) for Virginia.

Chris and I also published a paper detailing the Odonata of a military base in Caroline County that proved to have a very rich (and somewhat unique for Virginia) fauna.

Finally, I saw at least 20 ***Sympetrum vicinum***, including 2 tandem pairs, on 18 December in the afternoon (sunny and about 60 F) while surveying several ponds in York County. My field companion also saw one ***Anax junius***. As far as I have been able to determine after doing some very quick checking of my literature, this is a record late date for the ***Sympetrum***. The weather turned cold and rainy today and my coworker just returned with the news that he didn't see any dragonflies during a return trip to the ponds.
19 Dec 1996

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MARYLAND COUNTY RECORDS

from **Richard Orr; rorr@aphis.usda.gov**

Richard Orr has reported the following county records: ***Gomphus quadricolor*** (Washington); ***G. rogersi*** (Garrett); ***Aeshna mutata*** (Garrett); ***Somatochlora elongata*** (Garrett); ***Leucorrhinia glacialis*** (Garrett); ***L. hudsonica*** (Garrett); and ***Enallagma weewa*** (Wicomico)

Large numbers of ***Aeshna canadensis*** were seen in Garrett Co. and ***A. tubericulifera*** in Howard Co.

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MORE ON THE RAT PACK IN ECUADOR

Jerrell J. Daigle, Sid Dunkle
Bill Mauffray, and **Ken Tennessen**

On our last July trip to Ecuador, the "Rat Patrol" collected some interesting species. We would like to report the following probable? new Ecuador country records:

Aeolagrion foliaceum, Philogenia minteri, Polythore terminata, Aeshna intricata, Macrothemis hahneli, and ***Micrathyria iheringi***.

Also, we would like to report our possible undescribed species. They are at least 5 ***Heteragrion***, 4 ***Argia***, 3 ***Epipleoneura***, 2 ***Protoneura,*** and one each of ***Acanthagrion, Allopodagrion, Calvertagrion, Lestes, Metaleptobasis, Mnesarete, Oxyagrion,*** and ***Coryphaeschna.***

We may be going back in February encountering even more new species to describe! One thing is for certain! This summer's weather forecast calls for paper flurries and more paper flurries!!

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ELECTION TIME

Ken Tennessen, President

It is time for another **DSA** election. We must elect a new President-Elect, as Rosser Garrison

will take over as President at the next annual meeting in June of 1997.

If you would like to nominate someone, please submit the nomination soon to myself or another member of the Executive Committee.

All nominations so received will be canvassed by the Committee, and a ballot presented in the next issue of **ARGIA** for a vote by the membership.

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COMMON NAMES: CHANGES AND ADDITIONS

Please note the following changes in the list of Common Names:

Gomphus crassus, Handsome Clubtail (omitted from list)
Aeshna juncea, Sedge Darner (mistake in list)
Somatochlora incurvata, Incurvate Emerald (mistake in list)

In a related note, a Common Names Committee (CNC) was officially appointed by **DSA** President Ken Tennessen. The 7-member committee consists of Tim Cashatt, Jerrell J. Daigle, Nick Donnelly, Sid Dunkle, Bob Glotzhober, Dennis Paulson, and Steve Valley.

In their first order of business, the CNC has proposed names for newly taken US species:

Dythemis maya: Mayan Setwing (newly taken in west Texas)
Palaemnema domina: Desert Shadowdamsel (recently found in southern Arizona)
Tauriphila azteca, no name yet proposed (recently found in southern Texas)

The committee will be pleased to receive comments and proposals concerning these names before formally proposing them to the Society.

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BOOK REVIEW:
HAWAIIAN DAMSELFLIES. A Field Identification Guide

Dan A. Polhemus and **Adam Asquith**. 1996. Bishop Museum Press, 122 pps., 60+ color plates, maps, figures.

Price = $19.95 plus $3.00 postage and handling. Write Bishop Museum Press, 1525 Bernice Street, Honolulu, Hawaii 96817 or call (808) 848-4135.

Reviewed by **Jerrell James Daigle**
DAIGLE_J@dep.state.fl.us

"Damselflies are one of the largest and more colorful groups of native Hawaiian insects. This practical field guide, designed to appeal to both scientists and the general public, provides all of the information needed to observe and identify the 26 species and subspecies of damselflies occurring in Hawaii. Generously illustrated with over 60 full color photos and numerous drawings and maps, this convenient, easy-to-use handbook is an essential companion for the amateur naturalist, science professional, or anyone interested in Hawaiian aquatic ecosystems, their biota, and their conservation.

Introductory sections contain discussions of damselfly anatomy, behavior, ecology, and evolution, along with much additional information on the basic limnology of the Hawaiian Islands. A handy set of "quick keys" aids readers in making preliminary identifications of species on the basis of color and habitat. For precise species identification, the main text includes detailed treatments of each species accompanied by color photographs, distribution maps, and silhouettes showing species size. A glossary of scientific terms is included and an appendix containing more technical keys is provided for readers with scientific backgrounds and access to a microscope."

That was the official press release. The wealth of new ecological information was extremely fascinating and useful. The book contains the first ever keys to the elusive ***Megalagrion*** larvae. Most of the live and posed photos are quite good. Although I really like this basic field guide, it was not peer reviewed taxonomically speaking. A future revision of ***Megalagrion*** is still necessary. Readers should consult the earlier works of Perkins, Williams, and Zimmerman for additional information on this fascinating and speciose genus.

No biometric data or evidence was given to support the authors' opinions regarding the synonymizing of several ***Megalagrion*** species. I

have no real data on the ***M. amaurodytum*** and ***M. koelense*** situation and I can't comment on it.

Based on my data, I believe the ***M. deceptor*** found on Oahu, Maui, Molokai, Lanai, and Hawaii (Figs. 33, 34, 35, and 80) and ***M. hawaiiense*** (Figure 36 and Oahu only) are separate species. Also, the ***M. hawaiiense*** found on Kauai is an undescribed species (description in press). Also, ***M. dinesiotes*** from Maui (Figs. 46, 47, and 87) and the brilliant red ***M. nesiotes*** from the Big Island of Hawaii are distinct species plus I believe ***M. nigrolineatum*** from Oahu should be elevated to specific status.

While there may be other typos that I may have missed, I have included the following corrections:

On page 32. the larva gills shown in fig. 20 are ***Ischnura posita***, not ***Enallagma civile***.

On page 50, the red aberrant ***M. eudytum*** was collected by me and I believe it to be a distinct species, pending examination of additional future specimens.

Megalagrion koelense has never been collected on Maui but the map on page 63 shows otherwise.

On page 80, fig. 59 shows a female ***M. oresitrophum***, not ***M. orobates***. ***M. orobates*** females have red abdominal segments with thin black apical rings on segments 4-7. ***M. oresitrophum*** females have all black abdominal segments except for the reddish 8-10 segments.

On page 86, fig. 64 again shows a female ***M. oresitrophum***, not ***M. vagabundum***. The larger ***M. vagabundum*** females have red abdominal segments with thin black apical rings but segments 6-8 are black dorsally with thin red basal rings. The thorax is light brownish red and the face is reddish brown, not black and green as in ***M. oresitrophum*** females.

On page 95, the quoted reference should be Williams 1936, not Williams 1945.

I would like add a few general comments. Air drying of refrigerator preserved adults may cause specimens to decay and smell if not immediately acetoned or oven dried.

Also, there are very few road-accessible places to see ***Megalagrions*** in Hawaii. The best place is along Maui's Hana Highway which crosses about 57 flowing streams. All other good Hawaiian locations require 2-8 miles of hiking and you may see only 2-3 species. If you come to Hawaii, please spend some time doing other activities such as diving among the reefs, beachcombing, exploring, shopping, going to luaus, relaxing on the beaches, and whale-watching.

All in all, I would definitely get this book. It will make a nice Christmas gift and it will get you salivating to go to sunny Hawaii!

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REQUEST FOR INFORMATION ON *ARCHILESTES GRANDIS*

Dave Moskowitz; HOOTOWLS5@aol.com;
(from e-mail)

I am interested in obtaining info on the habitat of ***Archilestes grandis*** in New York/northeast and Mike May suggested I contact you. I was fortunate enough to locate six locations for the species this year in Central New Jersey (one Mike told me about) and have become very interested in the species! Nearly all the habitats are different, and most suffer from degraded water quality (storm-water runoff, roadway runoff, agricultural runoff, litter). It seems to me the species ability to colonize these diverse and degraded habitats, at least in part, explains its ability to extend its range so rapidly this century. Anyway, any help you can give me regarding its habitat in other areas would be useful. I am drafting a write-up of my observations for **ARGIA**, but can find little habitat information for the northeast.
3 Nov 1996

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A REQUEST FOR ADDITIONAL INFORMATION FOR E-MAIL DIRECTORY

Bill Mauffray, I.O.R.I; **iori@afn.org**
(from e-mail)

I am updating the e-mail directory for the **IORI** World Wide Web site. located at **http:///www.afn.org/~ioir/** I would like to do a brief profile of each person on the list. Please (1) check to see if you are on the list, (2) check to see if the address is correct, (3) If you are not on the list, or if any of the following information is missing, send it to me: your name, e-mail address, institution or affiliation, City, state or province or other, and country, and a brief description of your interest (please no more than 100 characters). If you have a picture of your self and would like it as part of your profile, it must be "scanned" and submitted to me as a "**.gif**" file on diskette; or you can send me a non-returnable picture and I will scan it into a file. If your picture is on the Internet already, then provide with the address for your picture so that I can link your name to your picture. You might try to e-mail the photo to me as an attached file (some systems allow this). Mail diskette or photo to Bill Mauffray, 3906 NW 32nd Place, Gainesville, FL 32606, or e-mail: **iori@afn.org** So far I do not know of any instance of where someone on the e-mail list has received junk e-mail messages, unless; however, if you would count my book sales notice that I sent everyone last spring!!! For my personal data base, I would also like your postal mailing address, home , work, and fax phones . The address and phones numbers will not be published on the internet.

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IORI STORE: (prices effective Jan 1-Mar 31 1997)

Bill Mauffray; iori@afn.org

All profits go to **IORI**.

Damselflies of North America 1996 (Westfall & May) $62.55 + 5.00 s&H ($7.50 Outside US)

Damselflies of Florida ...1990 (Dunkle) Soft Cover. $13.45 + 3.00 S&H ($5.00 OutsideUS); Hard Cover. $17.96 + 4.00 S&H ($6.00 Outside US)

Dragonflies of Florida.1989 (Dunkle) $13.45 + 3.00 S&H ($5.00 Outside US)

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2000 to 4999	$.040
more than 5000	$.025

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SPECIAL: box of 5000: $250.00 + 10.00 S&H ($15.00 Outside US)

amount	price per envelope
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200 to 499	$.075
500 to 999	$.070
1000 to 1999	$.065
2000 to 4999	$.060
5000 to 19999	$.050
20000 or more	$.045

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Send Check or Money Order in US funds to:
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P.O. Box 147100, Gainesville FL 32614-7100, USA

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I.O.R.I TECHNOLOGY UPDATE:

Bill Mauffray

The I.O.R.I took the on-ramp to the information super highway two years ago when it launched its web site. This site, located at **http://www.afn.org/~iori/** is recognized as the best general Odonata web site in the world, with links to and from many countries. It was set up at no cost to the **IORI** by Bill Mauffray who negotiated for free web space and access from the Alachua Freenet in Gainesville Florida. It is updated at least twice a month, mostly with new links and e-mail addresses.

After unsuccessfully trying to obtain a computer by donation, I have purchased a computer system for the I.O.R.I to be placed in the office at Gainesville, Florida. The sales of books and specimen envelopes have provided a surplus of funds for 1996. This surplus has provided the funds for the purchase of a Pentium 133 with 32 MB ram/ 33.6 modem, 3GB hard drive plus many other features.

Additionally I have hired a part time assistant who has data entry, and curative experience. This assistant, Michelle Fanolia. is currently an employee of the FSCA.

Michelle will be setting up an Odonata Bibliography on the new computer system. The bibliography will be linked in with other FSCA entomological bibliographies within the FSCA building network, set up with financial assistance from an NSF grant. In 1997, a direct connection between the FSCAs Doyle Conner Bldg. and the Florida Museum of Natural History will give the **IORI** a change to have a direct connection (Vs a phone connection) to the Internet. At that time the bibliography and the Odonata database will be available to everyone by way of the web.

Another service to be launched, as soon as I can find a new server, will be the ODONATE-L news discussion group on the Internet.

I hope to showcase the new electronic features of the **IORI** at the **DSA** meeting this summer.

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PAULSON'S WEB SITE

Dennis Paulson's web sites are
http://www.ups.edu/biology/museum/UPSbiodiversity.html and
http://www.ups.edu/biology/museum/UPSdragonflies.html (to go directly to the odonates.)

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MARIETTA COLLEGE WEB SITE

Bob Glotzhober; rglotzhb@infinet.com
(from e-mail)

Dave McShaffrey of Marietta College has a home page that he has set up with some of the data from the Ohio Odonata Survey. He has distribution maps for each species, county lists, and other information. Unfortunately, at the moment his data represents only 14,000 records while our database now has 22,000 records. Dave and I will remedy this situation this winter. There are a few errors in some of his maps as well, to be corrected later. His site also shows current research projects of some of his students. Check it out at
http://www.marietta.edu/~mcshaffd/odo/odonata.html
[I have checked out and found it a thoroughly worthwhile, interesting site. Ed.]

Pass any comments along to Dave, or to me. I keep the entire database in current form on computers here at the Ohio Historical Society, on my home PC, and on backup tape.

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ILLINOIS ODONATA DATABASE ON THE WEB

Everett D. (Tim) Cashatt
cashatt@museum.state.il.us
(from e-mail)

This is not as fancy as Ohio's posting, but at least it is a start! We still have a backlog of specimens to enter -

Illinois county lists of species:
http://www.museum.state.il.us/research/entomology/od_db.html

Non-Illinois odonata collection
http://www.museum.state.il.us/research/entomology/od_outofstate.html

Illinois Dragonfly checklist, including status
http://www.museum.state.il.us/research/entomology/df1list.html

Illinois Damselfly checklist, including status
http://www.museum.state.il.us/research/entomology/df2list.html

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GERMAN WEB SITES INCLUDE PHYLOGENIES AND FOSSIL ODONATE INFORMATION

Guenter Bechly; Guenter.Bechly@t-online.de
(from e-mail)

The International Specialist Group of Systematic and Phylogenetic Odonatology is now present in the Internet, including an online edition of its

journal PETALURA:
http://members.aol.com/Petalura/sgspo.htm
A new phylogenetic system of all taxa of fossil and recent odonates above the generic level (including lists of autapomorphies etc.) is available on the Internet too:
http://members.aol.com/odonatadat/phylogeny/bechly.htm
Photos of fossil odonates (jpeg) can be downloaded from:
http://members.aol.com/odonatadat/phylogeny/photos.htm
30 Oct 96
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UNEXPECTED RESULTS!

Steve Walter

As an introduction to this article, I must note that I prefer to stay away from collecting. If I had my druthers I would prefer not to harass the bugs I pursue with a net. Unlike butterflies, however, it is simply not possible to positively identify many species of odonates without getting them in the hand. While it may be possible to learn field marks to take the place of appendage study in some groups, those genera that are highly aerial present another problem. Two genera that are perhaps at the forefront of the must catch category are ***Aeshna*** and ***Somatochlora***.

In lieu of collecting, I do several things in order to facilitate identification to species. I examine individuals in the hand and take detailed notes of their markings and appendage shapes. I measure their length. Then I attempt to have them photographed in two ways. First an individual is held in the hand and photographed mainly for identification purposes. Subsequently, an attempt is made to take a shot(s) of the unrestrained dragonfly (or damselfly) for artistic purposes (as you would imagine, this part doesn't always work). If after all this the individual has not escaped, it is allowed to do so.
As you can imagine, this process takes several minutes. Even though I handle every individual gently, do I cause it enough stress to the point of being detrimental? One reaction I've found on the part of some (disoriented?) damselflies is for them to fly upward upon their release. I had an occasion where an ***Anomalagrion hastatum*** flew off and was quickly snatched by a ***Celithemis eponina.*** I now look to release all damselflies near cover. As for direct harm to these seemingly delicate creatures, that seems very avoidable. Now one would think that a more robust dragonfly would fare just fine, as well. That's usually the case, but a couple of situations in the summer of 1996 turned out differently for me.

On 25 August 1996, Dusan Rysula and I visited Ward Pound Ridge Reservation in northern Westchester County, New York. Species of the genus ***Aeshna*** were our primary quest. I managed to net three individuals over the course of the day. The first was a male ***A. verticalis*** (identified later from photographs) patrolling over a marsh, whose capture prompted me to jump for joy at my unexpected netting success (2 ***Sympetrum semicinctum*** in the net as well). He was photographed and released. No problem. The next two were a pair of ***A. constricta*** (also identified later) mating on the ground, a tainted catch on my part. But after total futility in trying to catch the male patrolling over the adjacent pond, I couldn't be too proud. I don't recall if the pair separated on their own in the net or had to be separated. In any event, the male was taken out for inspection first. He was measured, illustrated in my note pad, and held for side and top view photographs. Now it was time to prop him up for an attempt at a "natural" shot. This is point where the dragonfly would normally take off. That was not the problem this time. Instead the problem became trying to keep him propped up. Somewhere between the first and second photos, the dragonfly apparently expired. Subsequently, I returned to the net for the female. Within a few seconds of my pulling her out of the net, she expired too.

This recalled our trip to the same location on 28 July. First, a female ***Somatochlora tenebrosa*** was lost during handling. This didn't exactly play into our hands for natural shots, either. Not with a twisted neck. Later that day, a male ***Somatochlora*** was brought to net with the same result. A twisted neck and a twist of fate. This individual did not match the size nor appendage pattern *of* ***S. tenebrosa***, the most likely species here. I eventually sent the specimen to Ken Soltesz for identification. He notified me that is was ***Somatochlora walshii***, a first record for Westchester County. As fate had it, this relative novice at dragonflies was left with a specimen of a species whose normal range is a couple of hundred miles to the north, incontestable proof.

Anyway, let me get back to the point of this article, which was the death of these dragonflies despite seemingly gentle handling. Being relatively new to this type of study, I didn't know whether this was a normal occurrence. Ken, whom I mentioned this to, relayed that he had not had this experience. Perhaps it requires the time consuming procedure I've described in order to manifest itself; do other dragonfliers do this? And why these large, seemingly not so delicate species? My guess is that being highly aerial translates into high energy expenditure; in the case of the ***Aeshna constricta*** pair, added to by the mating effort. Does anyone have more insight or ideas?

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HOW HIGH DO DRAGONFLIES MIGRATE?

Steve Walter

The question of how high dragonflies migrate is one that couldn't be answered by my study at Fort Tilden. That study was conducted at ground level. I could note that ***Anax junius*** (most noticeable because of its size) and other species were at times flying well above ground level, but how high was not measurable. Moreover, the smaller species could not be identified. That, combined with the busy traffic closer to the ground, precluded significant focus on the upper layers of the flyway.

During the summer of 1996, I had a 10th floor office window on the west side of Manhattan, near Penn Station. From late July into September, dragonflies were commonly seen outside the window. Not only were dragonflies noted at that level, but also by looking upwards. Conservatively, dragonflies were flying at least 12 stories above the ground. While the activity was at times of a swarming nature, the dates and species composition left no doubt that their presence here was as a result of migratory activity.

The greatest abundance was observed on the afternoon of 30 August. A cold front had brought northwest winds during the morning and, I assume, an excellent flight to the shore. By afternoon, the wind subsided, allowing an onshore breeze at the beach and a southeast wind over Manhattan. This, apparently, shifted the flight inland. There had been almost no dragonflies seen until 1300 hours (EST), with the bulk of the flight occurring between 1400 and 1530 hours. ***Anax junius*** was the most numerous species of this flight.

Other species observed from my window were ***Epiaeschna heros, Libellula semifasciata, L. vibrans, L. pulchella, L. lydia, Pachydiplax longipennis, Pantala flavescens, P. hymenaea, Tramea carolina, and Tramea lacerata***. Some of these I had previously noted as largely hugging the ground. The key to that, however, is that they were identifiable close to the ground. Here now was a whole new view to dragonfly migration.

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THIS IS WHAT YOU CALL BASS FISHING?

Steve Walter

On 15 June 1996, Dusan Rysula and I embarked on a dragonflying / butterflying / fishing trip at Ward Pound Ridge Reservation in northern Westchester County, New York. The last mentioned endeavor was first on the day's agenda, as it is the least affected by the morning chill. With the strong June sun at work, it wasn't too long, though, until the little guys got going. And being at the water's edge to fish, one is in a position to know when the dragonflies are ready. But to highlight that point, we found out in an unusual way.

At one point, my fish hook was left dangling above the water's surface; I may have been distracted by some flying critter of interest. Dusan said, "Look" (in my clouded recollection of exactly how that transpired, I conjure up thoughts of Curly of The Three Stooges saying "look" and pointing to a damaged hammer or saw that had just been used on his head). I looked at my dangling line to find a ***Basiaeschna janata*** hanging onto the hook. As it turned out, it was not hooked but holding on to the piece of earthworm that was the bait. It was so fixated on the worm, however, that we had time to take three photographs of it before it finally let go and flew off.

In summation, I was trying for bass... and got ***Basiaeshcna***.

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INFORMATION NEEDED: *ANAX JUNIUS* AND/OR PUERTO RICO

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(1) As part of my ongoing effort to bring together a coherent picture of the life cycle(s) of ***Anax junius*** in North America, and particularly its migratory behavior, I would appreciate receiving any information that anyone can provide about the occurrence of this species in Mexico and the Antilles, and along the Gulf Coast of the Unites States. I especially need information on dates and localities, evidence of breeding or attempted breeding (e.g., oviposition, collection of exuviae) and condition of adults (e.g., teneral, mature, worn; occurrence of tandem or copulation behavior or of copulation marks).

(2) My department is beginning a long-term collaboration with the University of Puerto Rico. This will involve a study of seasonality and diversity of insects on that island. An objective of my own is to develop a database of distributions and seasonal occurrence of Odonata. I would appreciate any collecting information that you would be willing to share, and in any form (copies of field notes; files on floppy disks, etc.)

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THE DOT-MAP PROJECT IS STILL ALIVE!

Nick Donnelly; tdonnel@binghamton.edu

A few years ago I started a project to produce dot maps for each species in North America. My original solicitation for state lists of species according to the county of capture was very successful, especially in the northeastern United States. Several other people have indicated that they would send data, and I hope that they will. I will probably produce a dot-map for the northeastern quarter of North America (at the county level) as the first step towards a map for North America. For those states for which I cannot obtain data, there may be a rather pale pattern showing the unavailability of data. Clearly I would like to minimize this effect.

I now have for the northeastern part of North America some data for the following states: New Hampshire, Maine (older), Massachusetts, Connecticut, New York, Pennsylvania, New Jersey, Maryland, Ohio, Illinois, Michigan (older), Minnesota (older and fairly incomplete), and Indiana (older). For Canada I have only Quebec (older). I need Vermont, West Virginia, Kentucky, Wisconsin, Ontario, and the Maritimes. If you can supply data, please contact me. The more data I get the better the result will be!

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DRAGONFLY PRINT AVAILABLE

"The Predator", a painting by entomological artist Barry Flahey, depicts in full color a Blue Darner dragonfly (***Aeshna canadensis***) attacking a Clouded Sulfur Butterfly (*Colius philodice*).

This image is being offered in a limited edition of 450 lithographic prints, pencil signed, and numbered by the artist. The overall paper size measures 25 ½" x 27 ½ " and includes an ample 2" margin for framing. Printed on archival quality, 100 % acid-free rag paper, each image comes with a printer-attested Certificate of Authenticity.

The prints are being offered at $90 Can, plus $6 for postage and handling. A small number of artist's proOfs are also available at $95 can. If you are interested but would prefer to see a color copy, write to Barry Flahey, PO Box 298, Manotick, Ontario, CANADA K4M 1A3

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NEW ISSUE OF THE BULLETIN OF AMERICAN ODONATOLOGY

The Status of *Lestes apollinaris* Navás and *L. henshawi* Calvert
Thomas W. Donnelly 4(3) p. 69-74

Poem - THE RED *TRAMEA*

John W. McLure

We climbed out of Bud Gode's 4 X 4
Adjusted nets, and searched for dragonflies and damselflies in the Big Marsh.
We were near the end of a three-year, state-wide census of these tigers of the air, even better, near the end of a hot day in the field.
I was dehydrated in spite of chic cranberry-flavored water, with legs stinging from grass pollen, cute, and nettles.
We drooped towards one last knoll.
At the top we were surprised to see a clear, shallow, virgin pond, devoid of trash.
The common helicopter cops were on pond patrol: the White-Tail, White Wing, Ten Spot, the little Amber Wing, and farther back, the shy damselflies.
"What's that?", Bud yelled, it's a red ***Tramea***! I've never been able to net one of those. Unless we catch it, we'll never know which Tramea it is.
The Tramea inspected me with its 30,000-facet eyes. I coiled and swung my best backhand, missed, and the ***Tramea*** left in a rouge streak.
From the opposite shore, a Ten-Spot clattered out to intercept it, and the ***Tramea*** accelerated and left the challenger in the slow lane.
The ***Tramea*** returned, and Bud and I went splashing after it, without luck, and the sun sank.
We could have caught a swallow by pouring salt on its tail more easily than we could have caught the ***Tramea*** that day.
It was more than a two-hour drive home, and we left knowing that we would be back with longer nets and fresher legs.
The ***Tramea*** won that inning, but it has made Captain Ahabs out of us.

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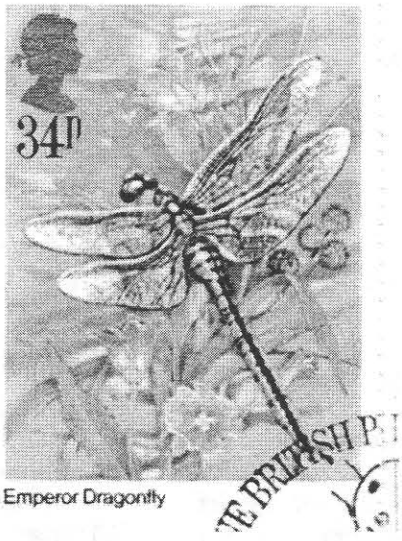

Emperor Dragonfly

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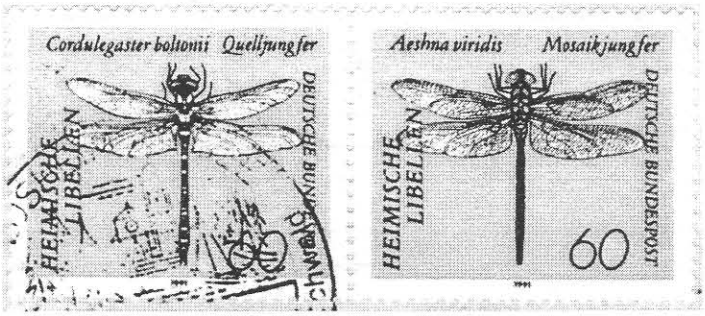

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