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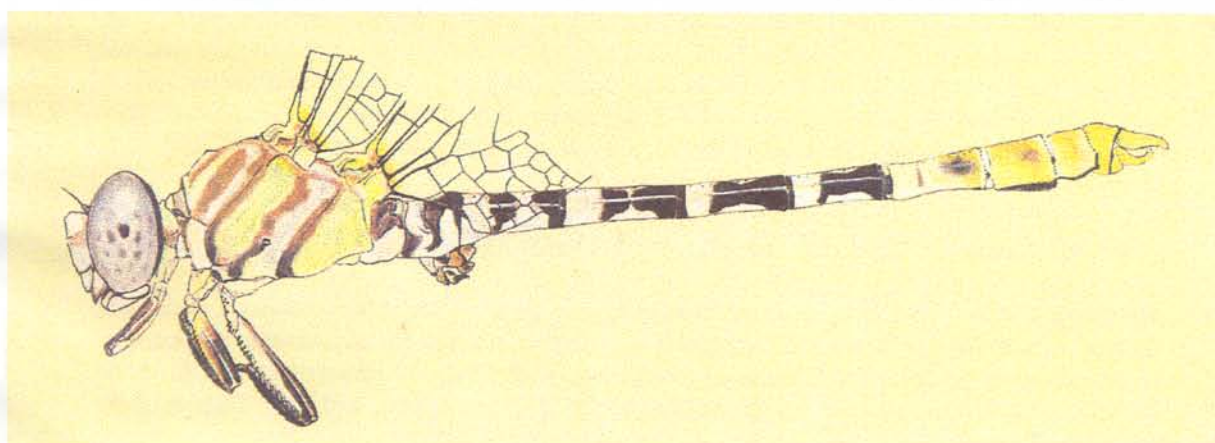
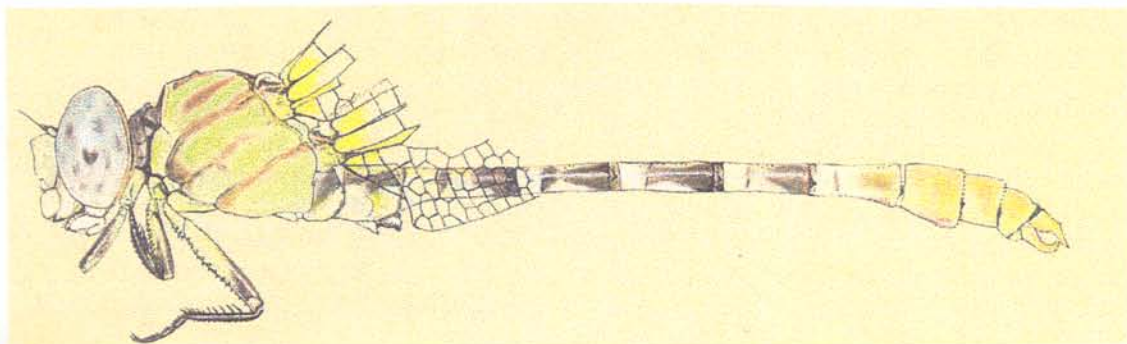
ARGIA

THE NEWS JOURNAL OF THE DRAGONFLY SOCIETY OF THE AMERICAS

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THE DRAGONFLY SOCIETY OF THE AMERICAS

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

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JOURNALS PUBLISHED BY THE SOCIETY

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

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

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

MEMBERSHIP IN THE DRAGONFLY SOCIETY OF THE AMERICAS

Membership in the **DSA** is open to any person in any country. Dues for individuals in the US, Canada, or Latin America are \$15 for regular membership and \$20 for 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: In the Spring a young man's fancy turns to gomphids. . . Pastel drawings of *Erpetogomphus designatus* and *compositus* by Rosser Garrison.

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

IN THIS ISSUE

Well the millennium came and went and no one even noticed that I misspelled the word 'millennium' on the cover of the last issue. However, posters announcing New Year's celebrations here in Binghamton also used both spellings. That's the problem with words we only use every 1000 years. When Y3K comes, I will spell it the other way...

The DSA meeting in Vancouver Island should introduce our membership to a lovely place few of them have ever visited. The Pacific Northwest is a fine area, and the post-meeting field trip to eastern British Columbia promises to mix great scenery and great bugs.

There will be two regional DSA meetings this Spring - the Southeastern in the Great Smoky Mountains, TN, and the Northeastern in the Hudson Highlands of Orange County, NY. We urge all people who can join one or both of these trips to do so. Mark your calendars!

Dave Wagner is hosting a dragonfly workshop on the Connecticut River in late May. There should be plenty of gomphid larvae and exuviae to study.

We were saddened by the death of Margaret Westfall after a long illness. Margaret was a good friend to many of us and we offer our condolences to Minter and his children.

The dot map project is now nearing completion. I show two sample maps - one showing the coverage of our data and one showing the recorded range of our most widespread odonate, *Anax junius*.

The examination of three suspicious specimens in the University of Nebraska collection gives us some very interesting records from the mid-continent. This is another illustration of the importance of collections.

In previous issues **ARGIA** has reported on new species taken in the United States. This time Dennis Paulson supplies us with not one but two new records from the Florida Keys. This emphasizes further just how incomplete our knowledge is of our own fauna.

One of the observations we are all making is that many species of odonates are appearing to increase their ranges. There may be several explanations, including fact that we are collecting far more things now. Some species might simply be taking

advantage of man's modification of the environment. But some are genuinely pushing north. The most interesting group consist of tropical species whose ranges might be limited by winter low temperatures, which cause larval mortality. Bob Behrstock documents the rise in temperature in suburban Houston and suggests that some tropical odonates whose ranges appear to be expanding in east Texas might reflect this rise.

I report on the continuing quest for color variants in the three circum-Caribbean species of *Orthemis*, a skimmer that had been perceived to be so common that it did not merit careful examination. Keep tuned - as of the moment the problem is wide open. But if you want to contribute - net them! And photograph them!

Ginger Carpenter reports on her impressive Rhode Island Odonata Atlas project. This teensy-weensy state has turned out to be a dragonfly wonder world. Richard Orr describes another fine locality in Maryland, a state which has some surprisingly fine habitats.

Ken Tennesen reports on yet another very successful trip to South America - this one his second Bolivian trip. It will be a long time (if ever) before trips down there do NOT turn up new species.

Jane Walker and Joe Smentowski enjoyed a trip to the Boot-Heel region of Missouri, finding swarms of *Pantala* and many other good things. Yes, you can collect dragonflies from a canoe if you have good balance.

I give a brief report on a late-season trip to the remote Miskito coast of Honduras. Forests in this area have apparently never been sampled for odonates - in fact there is an area the size of New Jersey that has not been touched, except for some specimens from lagoons just behind the ocean.

Fred Sibley updates us on the Virgin Islands. When I worked there years ago I did not find the odonates very interesting, but he has made a number of stimulating observations.

We have not one, but two, accounts of *Enallagma* doing strange things during tandem pairing. In my own experience this sort of thing seems more common among gomphids. Perhaps further observations will be forthcoming.

Mark O'Brien tells the sad story of Leonard's dissertation on the tropical damselfly genus *Acanthagrion*. His treatment of this speciose and widespread genus has caused years of grief for many tropical workers. This tale should serve as a cautionary reminder to keep one's specimens and observations clearly documented.

We finish with some book notices and an account of a popular article by Rosser Garrison.

A final note: for those of you that like wine (should we have a section entitled "oenea"?), a wine from

Giovello appeared a year or so ago. Ailsa found it in a local wine store, and a few members also discovered it. It is an Italian Pinot Grigio, in a blue bottle, with a lovely *Cordulegaster* on the label. It is pretty good, if you don't mind a few Calcium tartrate crystals. Noting the raging success of a dragonfly wine, an upstate New York vineyard came out with their own "Moonglow". The vivid label features two dragonflies that looked like they first appeared on black velvet in Gatlinburg. I am not in the business of reviewing wines, but I will state that only *Plathemis Lydia* could exist in this stuff.

CALENDAR OF UPCOMING EVENTS

26-27 May	Odonata workshop, Connecticut River CT	Dave Wagner
26-31 May	SE meeting, Great Smoky Mts. TN	Jerrell Daigle
9-11 June	NE Meeting, Sterling Forest NY	Karen Frolich, Paul Novak
28-30 July	DSA Annual Meeting, Nanaimo BC	Gordon Hutchings, Dennis Paulson

VANCOUVER ISLAND DSA ANNUAL MEETING (with possible Okanagan side trip): 27-30 July 2000

Gordon Hutchings, <sea-trek@islandnet.com>
1-250-995-1413

The first Annual DSA meeting of the Y2K will be held in British Columbia, the furthest western province of Canada. We will meet in Nanaimo, which is a strategically located large town on Vancouver Island with adequate access via ferries and flights from the mainland, as well as an easy 1 1/2 hour drive north from Victoria, the provincial capital of tourist fame. International flights can be booked into Seattle, Vancouver, or Victoria. Rental cars are available in these cities as well as in Nanaimo itself. We will check in Thursday evening, July 27 at 6:00 pm at the Malaspina College housing facilities and make sure most people have arrived and distribute maps. At that time, we will arrange to meet the following morning at 10:00 in a central parking lot on campus, to get out and collect. Some of the species to be found locally for the next 3 days will be *Somatochlora semicircularis*, *S. walshi*, *S. albicincta*, *Ophiogomphus occidentis*, *Cordulegaster dorsalis*, *Aeshna canadensis*, *A. multicolor*, *A. palmata*, *A. sitchensis*, *A. tuberculifera*, *Leucorrhinia glacialis*, *L. hudsonica*, *L. intacta*, *L. proxima*, *Libellula forensis*, *L. julia*, *L. lydia*, *Sympetrum illotum*, *S. madidum*, *S. obtrusum*, and *Ischnura erratica*. Chris Carson, Syd Cannings, Rob Cannings and myself will be available to lead one or more of the groups. Please bring appropriate clothing, liquids and packed lunch for all trips.

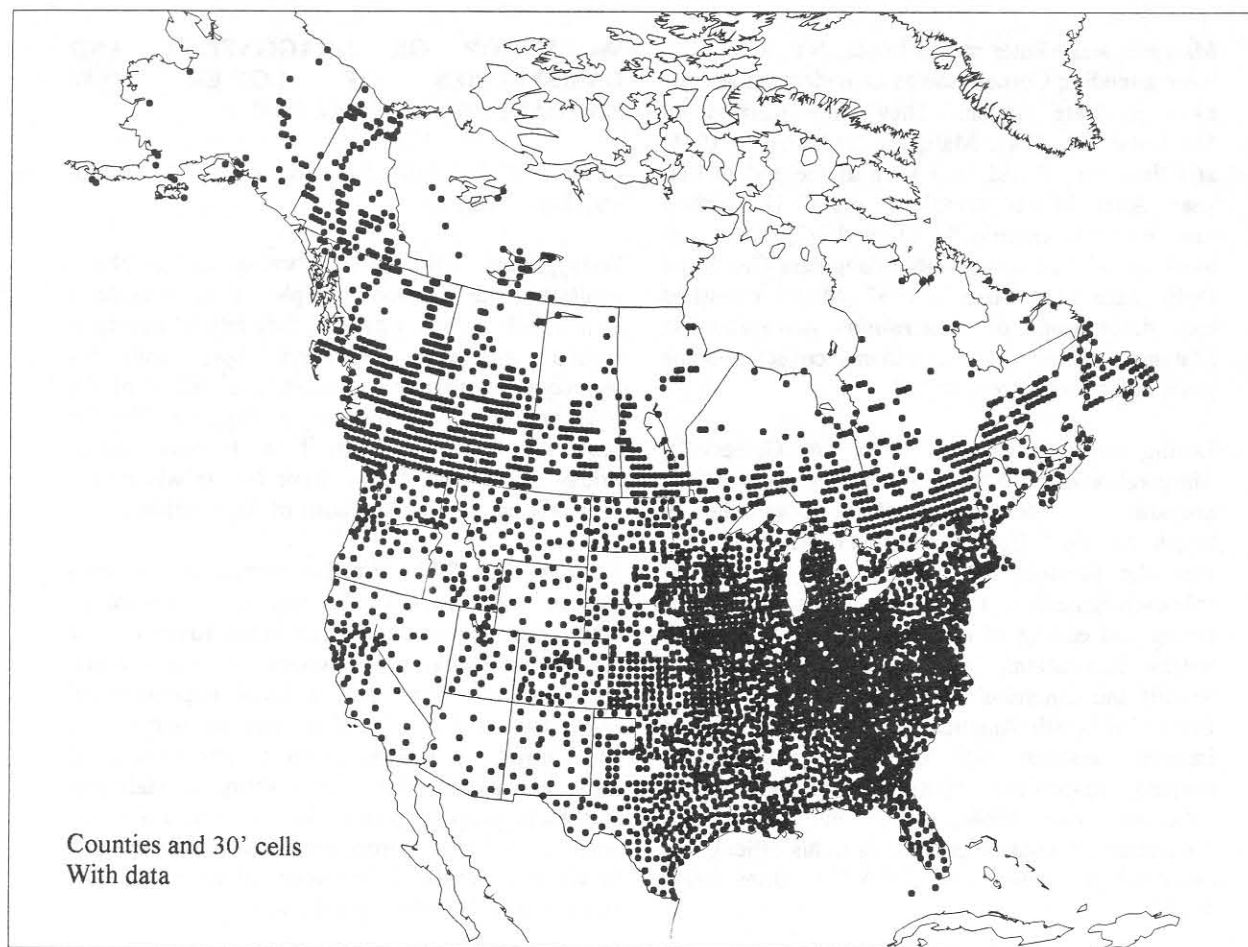
Friday, July 28: We will visit the Nanaimo Lakes district which is rich in wetland diversity ranging from bogs, streams, a large river, lakes and ponds, all of which are within a half hour drive. We will have a meeting at 7:00 to 10:30 pm at the lecture theatre on campus after finding meals in Nanaimo which has a great variety of places ranging from sit-down restaurants to several of the well known fast-food chains.

Saturday, July 29: Driving north about 45 minutes to an hour, we visit Summit Lake, and Great Central lake area along Highway 4, passing through Cathedral Grove/MacMillan Park and the town of Port Alberni. Those who are fast, may want to collect at Sunday's scheduled sites on the way back. We will have our last meeting, same place and same time, at which we can conduct DSA business and include some talks and slide shows.

Sunday, July 30: Driving north along Highway 19, we will visit Hamilton Marsh near Coombs and Bowser Bog in the town of Bowser. Some may switch around the previous days sites for this day. For those continuing east, there are regular ferries departing from Nanaimo, going over to the B.C. mainland where we can drive to the Okanagan, approximately 4 to 5 hours away.

Dennis Paulson will be taking over for the Okanagan portion of the trip.

At the time of this writing, I am still nailing down a list of optional motels, hotels and campgrounds but for now, Malaspina College has offered co-sponsorship for this event giving us single bedrooms at \$19.95 Canadian per person/per night with a shared bathroom per two rooms. The lecture theatre, which holds about 100 people, will be



DOT MAP PROJECT NEARING COMPLETION!

NICK DONNELLY

A flurry of e-mails has announced to the participants of the dot-map project that the data set is assembled. There are more than 102,000 records for North America.

I am currently in the process of going over the records and moving some of them into a doubtful category, which means they won't be plotted. Most records in this category are old ones for which the identification is questionable.

There are some surprises. Many more species than I had expected show a tendency to vagrancy, suggesting that we should re-think our concept of "range" as it applies to Odonata. Several species surprised me by having disjunct populations, and others are common at the extremes of their range and relatively scarce in the center.

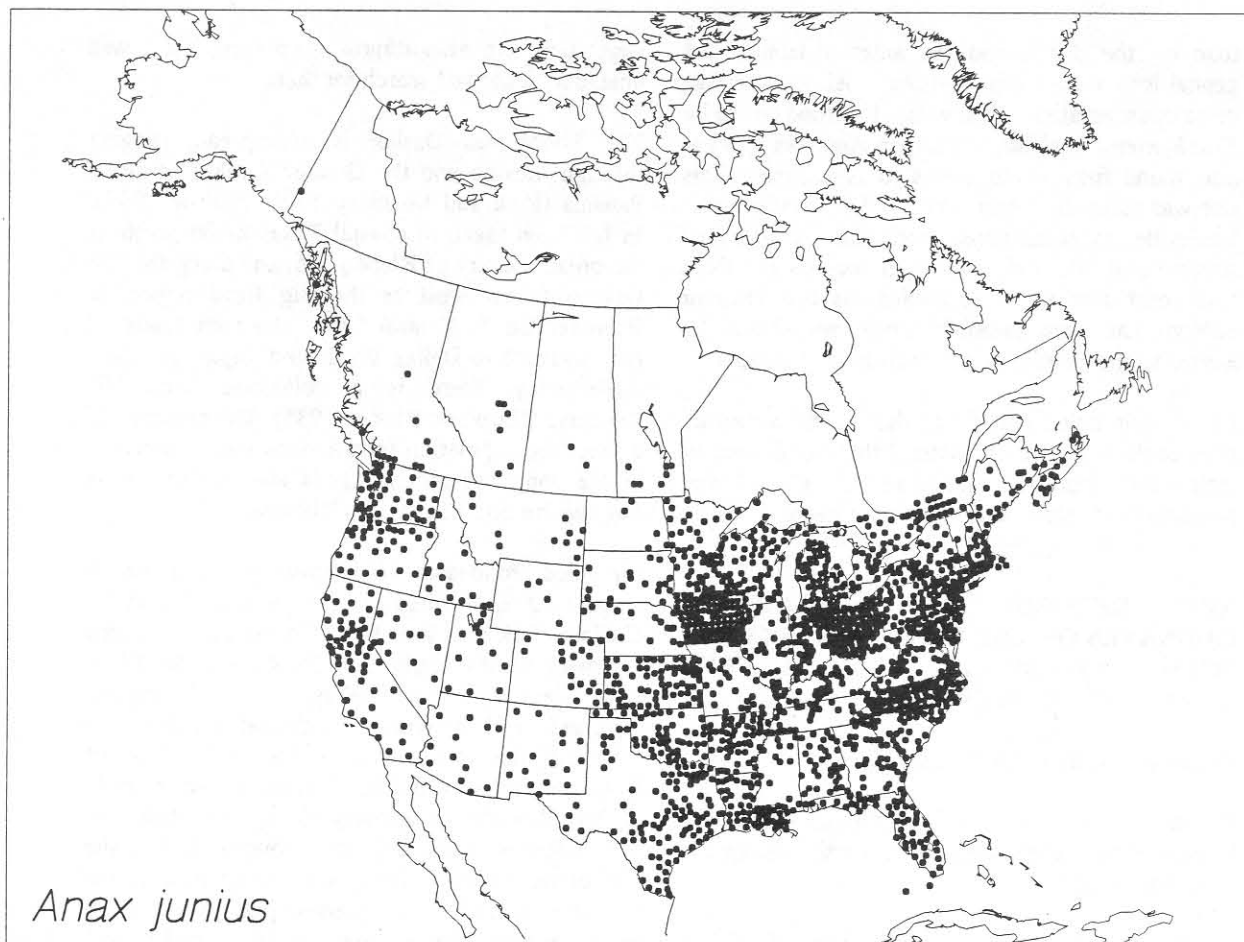
I have discussed taxonomic problems in earlier issues of *ARGIA* as well as through e-mail. Some subspecies might be treated as species, and some sibling species perhaps deserve to be subspecies. I

will devise a way of showing the results in a useful manner without making my prejudices more than a suggestion.

Accompanying this article are two sample dot maps, showing the Albers projection that I have decided to use. The first shows the location of US and southeastern Canadian counties, and Canadian and Alaskan 30' cells, from which I received data. There are data from 94 % of all conterminous US counties, with only eight states lacking more than four counties (Georgia, Illinois, Indiana, Kentucky, Mississippi, Nebraska, South Dakota, and Texas). I think you will agree that the coverage is fairly good.

The second map is of the range of *Anax junius*, which is the North American odonate with the most records. This doesn't show, of course, its considerable range south of North America. Note that it has a well-defined northern limit in the East, it is relatively scarce in the Rockies and northern Great Plains, but has been found in Alaska.

I have several records that list Odonata from state only, with more specific location. Some of these are old and remind us of a time when precise localities were not customary. An example is Hagen's 1875 record of *Tachopteryx thoreyi* from



Massachusetts ("Uhler Coll."), which is the northeastern limit for the species.

After I consolidate the corrections, I intend to publish a series of maps in the Bulletin of American Odonatology.

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DISJUNCT ODONATA RECORDS – THE AGONY AND THE ECSTASY

Nick Donnelly

One of the little tasks that has fallen on me in compiling the dot map is to try to clean up some of the suspicious old records that have been floating around. I have flagged many suspect records as "highly disjunct", meaning that they seem to be located from the nearest population. This has resulted in a fascinating e-mail correspondence. Records for which the specimen has disappeared (if ever it existed) are being dropped. Others involve a specimen correctly identified, but with the possibility that the specimen was mislabeled.

Recently Roy Beckemeyer asked the kind people at the Nebraska State Museum (misleadingly abbreviated UNSM) to send me three troublesome specimens for confirmation. The first was a

Gomphus lividus from "War Bonnet Canyon, Nebraska" (Don't you just love the name!). It was a female with the last half of the abdomen missing. The details of the face, occipital region of the head, and the front of the pterothorax makes it a *graslinellus*. This is not very surprising – but *lividus* would have been a very disjunct record.

The second was labeled *Libellula flavida*. It had been taken 25 mi S. of Valentine, which was, coincidentally, the very place the DSA met two years ago in the dreadful hot spell. This specimen was taken on 3 Sept. 1960 by a collector whose name is unclear on the label. (W.T. Atyeo?). It is a *Libellula auripennis*! I am just slightly less surprised than most of you, because recently I determined this species from Carter County, Missouri. This is a specimen that just loves cold, spring-fed lakes, and there are a few other populations quite a distance from the Atlantic coastline, where it is most commonly found.

The third was even more intriguing. I was unable to believe a record of *Brachymesia gravida* from Nebraska. This species lives close to the coast from Maryland to Texas, but penetrates to Oklahoma, New Mexico, and Arkansas. This identification didn't seem correct. There was deeper infumation on the basal half of the wing

Great Pondhawk (*Erythemis vesiculosa*): This widespread tropical species ranges from Florida and the south-central U.S. to Argentina (Abbott 1999, Bick and Mauffray 1999, Paulson 1999). [It has also been taken in New Mexico, Oklahoma, Colorado, and Arizona. Ed.] Although unrecorded on much of the Gulf Coast, Krotzer (1999) reported its recent occurrence in Alabama. It is well established on the Texas Gulf Coast (Abbott 1999), where it appears to be spreading eastward, occurring in temporary freshwater marshes, weedy fields, sun-dappled forest understory, and, in Chambers Co., at the margins of coastal salt marsh (pers. obs.). Recently, Bill Mauffray told me that *vesiculosa* has not been collected in Louisiana. During the last several years, I have seen and photographed this species on many occasions in coastal East Texas, noting it in Fort Bend Co. (including Brazos Bend SP and the abovementioned Cullinan Park), and at several sites in East and North Harris Co. Twice, (including 21 August 1999), I have seen 6-10 individuals in coastal live oak and hackberry mottes at High Island, extreme E Galveston Co. On 26 September 1999, I observed at least five in the understory of Sabine Woods, a coastal live oak motte in southeastern Jefferson Co. Sabine Woods is only c. 4.5 miles from Cameron Parrish, Louisiana where *vesiculosa* may already occur.

Possible Orange-bellied Skimmer (*Orthemis discolor*): Species limits within *Orthemis* remain unclear and surprisingly controversial. Only recently has *discolor*, a "crypto-species" hidden within populations of similar appearing Roseate Skimmers (*O. ferruginea*), been recognized as occurring in the United States. Paulson (1998) collected a male 17 Aug. 1977 in Fayette Co., TX, and Dunkle (1998) took a male 20 Oct. 1976 in Gonzalez Co., TX. During April 1999, Nick Donnelly (1999, and in litt.), a longtime observer of *Orthemis*, observed what he refers to as a red form of *ferruginea* (or possible an undescribed species of *Orthemis*) in Weslaco, Hidalgo, Co., TX. On the individuals he collected, the thoracic markings were those of *ferruginea* and quite different from *discolor*.

On 25 Oct. 1999, Paulson posted to dragonflies@listbot.com, a scan of side-by-side, hand-held *ferruginea* and *discolor*, netted in Mexico, commenting: "males of these two species are abundantly different in life, much more so than examination of preserved specimens indicated. There was surprisingly little variation in those we observed in Veracruz, each male easily identifiable as one or the other at moderately close range." This instructive scan may be viewed at:

<http://www.ups.edu/biology/museum/Orthemisdisferruginea.jpg>.

On 16 September 1999, I photographed two male *Orthemis* including a bright red individual. The images, shot within minutes of each other at woodland edge above the bank of Sims Bayou near the intersection of Telephone and Bellfort roads in SE Houston, Harris Co., TX, depict free-flying, live individuals matching both of Paulson's Mexican captives. Slides of both were sent to Paulson who concurred that one individual exhibited the suite of externally visible field marks by which he feels *discolor* may be differentiated from *ferruginea*: red (not dark) eyes, red (not dark) face, red (not pruinose pink) abdomen, reddish (not pruinose purple) thorax, paler reddish legs and all black (not blank and orange) wing venation. A side-by-side comparison of my slides may be viewed at the Digital Dragonflies web site at:

http://stephenville.tamu.edu/~fmitchel/dragonfly/Libellulidae/od_of_m.htm.

On 11 Nov. 1999, I returned to this site seeking a specimen of the *discolor*-like form. As earthmoving equipment rearranged the landscape, I encountered at least twenty typical *ferruginea* but no additional red individuals. During the last several years, I have observed hundreds of *ferruginea* in the Houston area; in late summer, they are especially common in weedy fields near water. I have seen only one red *Orthemis*. Complicating the picture even further is the existence of an undescribed red Antillean *Orthemis* found in S Florida. Further collecting in the Houston area will be necessary to confirm the presence of red *ferruginea*, *discolor* or superficially *discolor*-like individuals of an undescribed species.

Rainpool Spreadwing (*Lestes forficula*): On 5 May 1999, at the abovementioned *M. hagenii* site, I collected a female *Lestes forficula* (specimen in Dunkle collection). Returning on 28 May, I photographed two male *forficula* at c. 11:00 a.m. These images may be viewed on the Internet at:

http://stephenville.tamu.edu/~fmitchel/damselfly/image/lfo_2m1.htm

and

http://stephenville.tamu.edu/~fmitchel/damselfly/image/lfo_1m1.htm.

On 11 Nov., by which time the above mentioned pond was probably dry, I located two additional males in a small, barren, recently created pool just S of Sims Bayou but close to the original site. I collected one male (specimen to John Abbott).

On 14 October 1999, I collected a male *forficula* in NE Harris Co. at a shallow, weedy, recently created pond on property managed by the Harris County Flood Control District (specimen to John Abbott). This site is 5.1 miles east of U.S. Hwy. 59, and c.

17.3 miles north of the Houston *forficula* location. Other Zygopterans on the pond that day included Double-striped Bluet (*Enallagma basidens*), Familiar Bluet (*E. civile*), Citrine Forktail (*Ischnura hastata*), and Rambur's Forktail (*I. ramburii*).

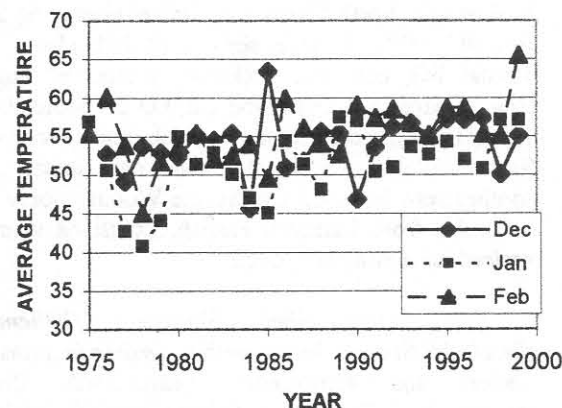
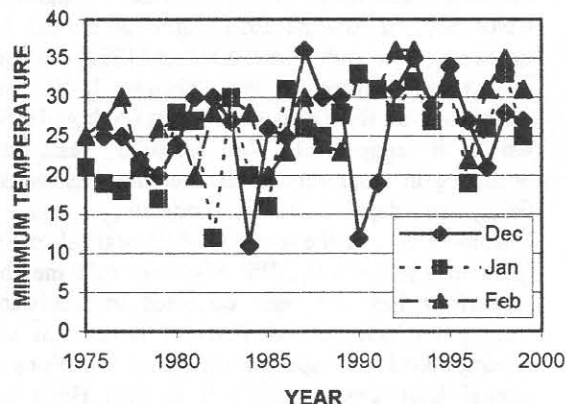
Rainpool Spreadwing ranges south from Mexico and the West Indies to Peru and Argentina (Paulson 1999). In Texas, it is locally common in the lower Rio Grande Valley at open and shaded pond edge and shaded forest understory (pers. obs.). Coastally, *forficula* has been taken only as far north as Aransas Co. with inland records north to Bexar, Brazos, and Leon counties (Abbott 1999). As with the above species the presence of multiple individuals within and just north of metropolitan Houston is of note.

Some readers may be interested to know that two Neotropical Lepidopterans, Mallow Scrub-Hairstreak (*Lycaenidae: Strymon columella*), also called *S. istapa*, and White-striped Longtail (*Hesperiidae: Chioides catillus*), both at the northern limits of their range, were also recorded at the Houston site that produced four of these Neotropical Odonates.

Factors causing range expansion have been discussed recently in the dragonfly email bulletin: dragonflies@listbot.com. There, Donnelly summarized several possible scenarios (2 Sep. 1999), including true expansions due to increased habitat availability, possible expansions associated with increased observer coverage, temporary straying of wanderers, and periodic invasions at irregular intervals; finally hypothesizing expansion along the northern border of a species' range due to a northward shift in the isotherm that determines winter survival of larvae. Dijkstra and Kalkan (14 Sep. 1999) demonstrated that increased observer coverage in The Netherlands uncovered at least 10 species whose ranges have spread either slowly or dramatically during recent years, or which have reappeared after a long absence. The trend cited by them and others is a northward expansion of southern generalists, often accompanied by a decline in northern and eastern habitat specialists. They refer to favorable climate and habitat availability as the two factors crucial to the success of expanding species, arguing in the process that increased summer, not winter temperatures are responsible for increased survival and dispersal.

Observer coverage in East Texas has not been intense, yet pond habitats have been examined sufficiently for us to know that none of the abovementioned species has been broadly dispersed for many years. At the same time, ditching of roads

and fields, and construction of livestock ponds, ornamental water gardens, and water retention ponds increased habitat availability for aggressive southern generalists.



The figures present National Weather Service temperature data from Houston's George Bush Intercontinental Airport (29° 58' N Lat., 95° 21' W Long.). Monthly low and monthly average temperatures for winter (Dec., Jan., and Feb.) are plotted from Jan. 1975–Feb. 1999. Calculations were made for the five-year clusters: 75-79, 80-84, 85-89, 90-94, and 95-99. During the 24 winters, the group minimum temperatures increased: 22.6, 24.8, 26.2, 29.3, 28.1, (the fifth group is a bit lower). The grouped average monthly temperatures also rose: 50.7, 52.5, 53.7, 54.6, and 56.1, representing an increase of about 5 degrees for the total 25-year period. After 1990 we registered 20 degrees or below in two months (for ten years). Before 1990 we registered 20 degrees or below in ten months (for fifteen years). A five-degree temperature increase in winter lows may enhance the ability of some aggressive southern odonates to spread northward.

I wish to thank the staff of the National Weather Service in League City, Texas for making climatic

data available, and Ralph J. Taylor, Harris County Flood Control District, Houston, TX, for giving me the opportunity to make a number of these observations. David Heinicke shared his recent record of *E. plebeja*. Thanks also to Dennis Paulson and Nick Donnelly for sharing their thoughts on Odonate distribution and identification. Additionally, Donnelly helped me present the temperature data in a more practical and meaningful style than did my original attempt.

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THE HUNT FOR RED ORTHEMIS

Nick Donnelly

(I liked Richard Orr's title so much that I have decided to recycle it.)

Several of us are in the midst of a long-running debate about the colors of the various species (named and unnamed as of this moment) of

Orthemis – the large dirt-common skimmer found around every mud puddle in the circum-Caribbean area as well as the southern United States. As I outlined in an article in *ARGIA* in 1995, there are two named species – *ferruginea* and *discolor* – from the US south to South America (Argentina, in fact), and a still-unnamed species in the Antilles. Part of our on-going discussion has to do with the various colors of these three entities.

To start with, we lack a good nomenclature for the various colors we are seeing. Red is pretty straight forward, but one form is what I clumsily call "pale gray magenta", and other forms are a medium to pale purple. What we really need is someone who buys lots of nail polish or lipstick to give us a set of trendy names that we can use. We are pretty much agreed that *ferruginea* tends to be purplish and *discolor* a more reddish color, but we needed observations on the still-unnamed Antillean form.

In Puerto Rico and the Dominican Republic both a "purplish" and a red form have been seen. Are these the same, or is there yet another unnamed species lurking on these islands? Deciding that the snow covering our front fence was a sign from above to leave, Ailsa and I went first to Grenada and then to Puerto Rico to scope out the problem and catch a few rays at the same time. In Grenada we found only one color form, which was mainly red – with a hint of purple. Don't you love this already? In Puerto Rico we found mainly bright red forms, but in the southwestern corner of the island we found purple (I called them "pale gray magenta") and red forms flying together. They seemed to interact at times, but the red forms seemed to stay back from the water for the most part, while the purple forms rarely left the water's edge. The wings of the red form seemed fresher – clearer in color (not yellowed) and not ragged. The wings of the purple forms were often quite ragged and often yellowed – both signs of age.

I conclude that the red form is a juvenile (NOT teneral) stage that "purples" with age and comes to the water's edge to engage in territorial activity. This shift in body color seems nearly unique among the world's Anisoptera. Why red and purple in the first place? Red is at the top edge of insects' color spectrum, so these must seem rather dark and dull to other insects, as well as to each other. Perhaps the red is useful for scaring away birds. But the pale gray magenta probably reflects lots of ultraviolet (it fairly glows in a long-wave ultraviolet lamp) and might seem very bright to other *Orthemis*. So maturation may be accompanied by "brightening" – to them, but perhaps not to us.

For the moment, it would be premature to consider using the shades of red and purple or whatever for

which is in San Ignacio. We saw numbers of *Diastatops intensa*, with its all-black wings (except for red veins in the base of the hind wing) and red abdomen, along with other libellulids and some interesting coenagrionids. I got a small libellulid which I can not place to genus at present. South of town we saw several species of *Erythrodiplax* and *Micrathyria*, *Miathyria simplex* and *Nephepeltia flavifrons*, and one male that may be *Oligoclada xanthopleura*. Everything seemed normal this day, so I suspect that the odonates in this region are adapted to unusual cold spells such as we experienced the day before.

So the next day we proceeded west of San Ignacio, visiting several shallow ponds and wetlands along the way. We found the beautiful *Coryphaeschna perrensi* (thorax of rather strange appearance with reddish over green), *Anax concolor*, *Erythemis haematogastra*, several *Erythrodiplax* species including *E. ochracea*, *Micrathyria* spp. including *M. eximia* and *M. spuria*, *Tramea* spp., *Lestes bipupillatus* and *L. forficula*, *Acanthagrion* spp. including one species that is near *minutum* but may be undescribed, a *Helveciagrion* that is not *chirihuanum*, and *Telebasis carmesina*, *T. carmenita*, and one other that keys to *T. fluviatilis* St. Quentin in the Bicks' key (1995). We also saw but could not catch *Planiplax*, no species of which is recorded for Bolivia. I think the many wetlands in this area are worthy of further attention. Bill might not want to go back here -- he was at one end of a pond and let out a loud screech, yelling "I think I stepped on a cayman!!"

Late that afternoon we drove on to Santa Rosa de la Roca, as we were told that it is the only place with overnight facilities and a gas station before steering north for the National Park. The only place we could find to spend the night was an "open air" restaurant that also had small wooden "cabañas." I am not exaggerating when I say there was not one thing clean about this establishment, and chickens were running around all over the place. Steve dubbed it "The Chicken Ranch". Guess what we had for supper. We learned something very important at supper however. Two fellows who spoke English stopped in the restaurant, and upon learning that we were planning to visit the park, told us that you have to haul your own gasoline as there is none available anywhere along the road or in the vicinity of the park. OK, decision time -- were we going to buy large cans and haul gasoline, or forego this part of the journey? After much discussing and reasoning, and lamenting, we decided we would have to visit the park on a future trip.

However, we decided we would go north of Santa Rosa a short distance to get some idea of what the

habitat was like in this area. We drove about 70 km and stopped at the Rio San Martín, where we spent most of the day. Here we saw many expected species, but also found several we had not yet seen in Santa Cruz dept., such as *Diastatops pullata*, *Oligoclada pachystigma*, *Erythrodiplax anatoidea*, and an *Orthemis* yet to be identified. After leaving the river, we zipped through Santa Rosa, hoping to spend the evening in Concepción. Crossing the gravel road was the largest tarantula I have ever seen -- it looked like a Volkswagon with big hairy legs! Steve and I noticed several large, unusual trees, with trunks constricted at the base and swollen higher up. They looked a lot like a Coca-Cola bottle. We asked Ingrid if she knew what it was, and she told us it was called the "toborochi" tree. We thought she said "Doborochi". Much later, when we learned the correct spelling, we applied our new word "Doborochi" to everything else that was good on our trip. When we got to Concepción, we decided to head back to Santa Cruz. Bill was not feeling well, and there was a strange clanging coming from underneath the vehicle Bill and Paul were driving. The next afternoon it was over 40°C, a change of over 65°F in two days! Neither odonate nor odonatologist was flying.

The next day I got what Bill had. We were both pretty weak, and did not want to venture far from a commode. Besides, it was hotter than the day before, way too hot to go collecting or even drive; we stayed in San Ramón for another day. On the 15th, Bill and I were feeling better, and we drove to Santa Cruz, exchanged the vehicle, got resupplied and headed west toward Villa Tunari in Cochabamba dept. On our way, we collected at a small forest stream near Sajta. Some of the more interesting things here were an unidentified corduliid, *Phyllocycla anduzei*, several red-eyed species of *Argia*, and *Mecistogaster linearis*. For the next week we used Tunari as a place out of which to work, and made daily excursions in all directions. I'll just mention some of the more interesting species we found: *Cora irene*, *Polythore boliviana*, *Philogenia buenavista*, *Gomphomacromia fallax*, *Progomphus* sp.?, *Acanthagrion abunae* plus a wonderfully strange new species of *Acanthagrion*, *Micrathyria dido*, *Oligoclada abbreviata* and *O. walkeri*, *Argia* spp., *Mnesarete regina*, *Misagria* sp.? (only one female), *Palaemnema* sp.? (family and genus new for Bolivia), *Lestes jerrelli*, and a *Protoneura* and a *Micrathyria* I can not identify. I also saw another *Planiplax*, but could not catch it. The biggest thrill I got was at the Rio Chipiridi, N of Tunari. I was digging up gomphid larvae, and had just gotten a few *Archaeogomphus* (genus unrecorded for Bolivia, unfortunately I was unable to rear these). On the next scoop, I came up with a 2-foot long

artist, he wrote a thesis of high quality well illustrated with 163 beautiful and accurately drawn figures. In it, he described 14 new species. Because of insufficient funds at that time, it was not published by the Museum. During the years since then only two or perhaps three of these species have been described by other authors. Because so few may be synonyms, the thesis has now been accepted for publication as a memorial number of the Miscellaneous Publications of the Museum, with only a minimum number of minor changes and without attempting to update it or to include the hundreds of specimens of this genus now awaiting determination." How usual it is for a revision to be accepted when known synonyms exist in the ms.? Gloyd did add an appendix to the publication, and she indicated which species might be synonyms of species described since 1937.

Ultimately, the author of a revision is expected to properly label and designate the specimens used in the revision. How else can subsequent systematists correlate the text of a revision to the actual specimens purported to be studied? In this case, that final bit of protocol never took place. Not only was Leonard deceased, but also he had never labeled the specimens he'd studied with his new names. Certainly, many of them bear "species c," "species e," etc. on the triangles, but many did not. Furthermore, as specimens get moved around over time, I have no way of knowing if what we have is in the same order that Leonard left the material in. I presume that Leonard would have completed that facet of his work, had he published his thesis, but he never did. Anyone working with that material must have been quite frustrated and I suspect that Gloyd, as fastidious as she was about proper procedure, let emotion overrule common sense when it came time to honor Leonard. This is really very unfortunate, since the principals involved in the matter are all now deceased, and whatever thoughts they held about publishing the thesis are gone. In addition to the specimens that Leonard worked with for his thesis, there are many hundreds of *Acanthagrion* collected subsequent to his thesis, but were not examined by him. Rosser Garrison has searched through most of the Leonard material but had not found the types for *A. jessei*, *A. rubrifrons* and *A. abunae* Leonard.

This is not to put down Leonard's work on the genus, which was thorough for its time (1937) and I have been told by Rosser Garrison that the descriptions are very well done, so that one can readily discern the species from his keys and illustrations. It is unfortunate that he never published the thesis in a timely manner. However noble their intentions, Gloyd and the UMMZ editorial board should have left an outdated thesis alone, rather than giving Leonard a "tribute" by

publishing his thesis after his death, and then not properly curating the material afterwards. Furthermore, the Museum of Zoology should never have published the posthumous manuscript without outside review. It is indeed ironic that instead of a tribute to Leonard's hard work, we have a confounding number of specimens that still await identification and correlation with a manuscript.

The lesson here is that an author of a revisionary work is responsible for ensuring that the specimens under his or her care are part of that work, and the revision is not finished until the specimens have been properly labeled and corroborated with the published work. Otherwise, future systematists will face problems similar to those above and question the integrity of the work. Since Leonard had died, there is no way he could have performed that final task, and the actions of Gloyd were reckless in not considering the ultimate disposition of the specimens.

This story need not have an unhappy ending. I am hopeful that someday, someone will want to spend a few weeks at our collection poring over the *Acanthagrion* specimens, and he or she will finally assign the right specimens as types, and sort the myriad of undetermined *Acanthagrion* into Leonard's and others' species.

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BOOK NOTICE

COMMON DRAGONFLIES OF CALIFORNIA, A BEGINNER'S POCKET GUIDE, by Kathy Biggs

If you have friends or relatives in California (or a state bordering California) whose interest in dragonflies you'd like to encourage, then you might be interested in Kathy Biggs' new book "Common Dragonflies of California, A Beginner's Pocket Guide" which will be available starting May 8th. The softbound book (5.75" X 4.5") has 96 pages, and is designed to be taken into the field in a pocket. There are 58 pages with photos covering a total of 77 of California's most common dragonflies and damselflies. A checklist of all California

species is included. The book contains 111 color photos (including many by DSA's own Bob Behrstock), with scanned live dragonflies on the 6 family pages. For each included species there is information on size, denoted both in mm and by a graphic line, a description of the male and female, a comparison to similar species, habitat information, current known flight period, and remarks on behavior. This is the first guide available for this western area. The book has a companion website with distribution maps, which are updated twice yearly and additional information. If you have Internet access you may order the book through the website: California Dragonflies and Damselflies <http://www.sonic.net/dragonfly>. Otherwise, those interested can send a check or money order for \$10.95 plus \$2.00 shipping to Kathy Biggs c/o Azalea Creek Publishing, 308 Bloomfield Rd, Sebastopol, CA 95472-5161 or call Kathy at 707-823-2911. A special presale discount price of \$9.00 plus shipping is available only through May 1st using the website order form or by mentioning "ARGIA" on the order.

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GEORGIA ODONATA UPDATE (1999)

Bill Mauffray, International Odonata Research Institute, Gainesville FL, <iori@afn.org>

The preliminary list covering the Odonata of Georgia (Mauffray, 1998-2000) was published on the Internet about two years ago. Since then numerous additions of data have been added by a variety of contributors: Giff Beaton, Bob Behrstock, George Bick, Jerrell Daigle, Sid Dunkle, Steve and Mary Jane Krotzer, Dennis Paulson, Dirk Stevensen, Ken Tennessen, Minter J. Wesrfall Jr., myself, and others. You could say that an unofficial Georgia Odonata Survey has been formed. Georgia is the only southeastern state which has not had an extensive survey of its Odonata. Additional records have been obtained from literature, and from data obtained personally from the University of Georgia collection in Athens, Ga., plus from the FSCA and IORI collections in Gainesville FL., and during the summer from 1999 from the USNM. Eight species have been added to the list (Mauffray, 1998a, 1999).

During 1999, several have reviewed the web site and have made a number of recommended changes and corrections. These were implemented during the fall and winter of 1999

I expect to run the web site list for a couple of years before publishing a hard copy in B.A.O. Please view the list at www.afn.org/~iori/galist.html. If you have any additions for the list please send them to Bill Mauffray iori@afn.org

References:

Mauffray, B (1998-2000). The Dragonflies and Damselflies (Odonata) of Georgia. <http://www.afn.org/~iori/galist.html>

Mauffray, B (1998a). Some new Georgia Odonata Records. *Argia* 10(3): 24

Mauffray, B (1999). Georgia Odonata Update (1999). *Argia* 11(1): 29

SPECIAL OFFER FOR STUDENTS: A REDUCED RATE SUBSCRIPTION TO ODONATOLOGICA

Bill Mauffray, Gainesville FL, <iori@afn.org>

Students in the Americas (Central, North, and South) can now qualify for a reduced cost subscription to *Odonatologica* for 2000. Any student (not already subscribing to *Odonatologica* within the last 2 years) who would like to obtain a subscription can apply for the special student rate of \$56.00 (includes postage and handling). The conditions are that the student must provide a brief statement of their interest and work in Odonata and must make a commitment to provide the IORI library with at least one copy of all reprints, articles and their thesis covering Odonata subjects. This rate will continue for up to four years and will adjust annually with the normal subscription rate: regular rate - \$28.00. The difference is paid by the IORI.

As an added incentive, an additional 10% discount will be added to all publications purchased through the I.O.R.I. during 2000-2001. This includes the forthcoming revised *Manual of the Dragonflies of North America* (see article in this issue) due out in June; and this is over and above any other advertised discounts. This will reduce your net subscription cost to about \$47.50 if you buy the "Manual."

This special is valid only in the Americas. The *Odonatologica* Subscription/ Foundation-SIO application can be copied from the web site at: www.afn.org/~iori/siomemb.html or you can simply write a note requesting a subscription along with a brief description of your studies or interest in Odonata and at which university, school, or institution. Please include your name, mailing address, phone number, fax number and e-mail address and send along with a check or money order in US funds to:

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TRAMEA

Nick Donnelly

There is relatively little to report in this TRAMEA. The most important new site is the USGS site, which has county-level data for the United States of all North American species. The site has been the subject of considerable discussion on the e-mail chat site, ListBot.Com.
<http://www.npwrc.usgs.gov/resource/2000/dfly/dflyusa.htm#maps>

Another site shows an ingenious wire sculpture of a dragonfly. This site was submitted by Dennis Paulson.
<http://www.coolight.com/dfly.htm>

The British Dragonfly Society has checked in with a long and detailed discussion about creating and maintaining backyard ponds for dragonflies. I just checked it out (15 March) and noticed it had been updated the previous day! This is one of the most complete discussions I have seen.
<http://www.dragonflysoc.org.uk/>

Ethan Bright found a web site that displays USGS topo maps. I couldn't get mine to print out well (It may depend on your internet connection), but the display is just like looking right at the map. It will do anything in the US. It's the next best thing to owning a huge stack of maps.
<http://www.topozone.com/>

Having trouble translating that paper by Ris? Dennis Paulson suggested this translation service. I tried it out and present some phrases that might be useful in the field:

À quelle distance est-il au Gomphus le plus proche?

Meine Erlaubnis für das Sammeln der Libellen ist zurück im Hotel.

Pienso que acabamos de encontrar un Epipleoneura nuevo, Pedro.

Que você esperou? Naturalmente meu suitcase é enchido com o coke da dieta.

Questa jeep realmente è attaccata.

<http://babelfish.altavista.digital.com/cgi-bin/translate>

Some illustrations of Finnish dragonflies (I can't translate this into Finnish) are at:
<http://personal.inet.fi/taide/karjalainen/dragonflies.html>

Need a Tee shirt? The National Wildlife Federation is having a sale on its dragonfly tee-shirts and pullovers (\$29.97 for pullover; \$14.97 for the tee shirt). See it on their website at
<http://catalog.nwf.org/201008.html>

Voici une adresse française de E-mail de langage pour permuter des nouvelles et des questions au sujet des libellules. Envoyez un message blanc de E-mail à
abonnement-odonata-fr@club.voila.fr

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