ISSN 1061-8503

ARGIA

THE NEWS JOURNAL OF THE DRAGONFLY SOCIETY OF THE AMERICAS

VOLUME 13 5 January 2002 NUMBER 4

PUBLISHED BY THE DRAGONFLY SOCIETY OF THE AMERICAS

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 as hard copy and (if over 500 words) also on floppy disk (3.5" or 5.25"). The editor prefers MS DOS based files, preferably written in WORD, WORD for WINDOWS, WordPerfect, or WordStar. Macintosh WORD disks can be handled. All files should be submitted **unformatted and without paragraph indents**. Each submission should be accompanied by a text (=ASCII) file. Other languages should be submitted only as text (=ASCII) files. Line drawings are acceptable as illustrations.

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

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

MEMBERSHIP IN THE DRAGONFLY SOCIETY OF THE AMERICAS

Membership in the **DSA** is open to any person in any country. Dues for individuals in the US, Canada, or Latin America are $15 for regular membership and $20 for institutions or contributing membership, payable annually on or before 1 March of membership year. Dues for members in the Old World are $25.
Dues should be mailed to Jerrell Daigle, 2067 Little River Road, TALLAHASSEE FL 32311

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

Cover: ***Argia funckii,*** Mexico. Or is it? This species – one of the largest coenagrionids in the New World - has always been thought to be solid dark gray. Has Dennis Paulson found the first red version?

Winter has set in, and, except for the lucky few of us who live in very southern places, the rest of us will simply have to wait for Spring to catch our first glimpse of a dragonfly. Winter is a time for reflection on the past season -- and planning for the next.

There are more good field gatherings on the horizon for the coming year than ever before. For beginners this will be a superb opportunity to meet others and learn some valuable things about these beautiful insects. Starting with a trip to the panhandle of Florida at the end of March, and continuing on to Alabama for a hardy core group, the schedule includes a trip to southern Arkansas in mid May, the Annual Meeting in West Virginia in mid June, the Great Lakes meeting in Michigan in early July, and a northeastern meeting in the Tug Hill of New York in mid July.

There are now two international organizations. They both hold biannual meetings, and this year they very nearly coincided. Happily these groups will in the future hold their meetings in different years, hopefully enabling people to attend both of them. Both the Swedish (WDA) and Siberian (SIO) meetings are reported here. Kiyoshi Inoue and Vicky McMillan provide good accounts of the meetings. Don't you wish you had been there?

Saskatchewan is in the news this month. Gordon Hutchings reports three new provincial records for Saskatchewan. This has been a poorly surveyed province, and Gordon shows us what can come from persistent searches. Also in Saskatchewan, Paul Catling and Vivian Brownell report on a large (huge!) swarm of ***Aeshna interrupta lineata***.

Roy Beckemeyer gives us several Great Plains records, including an enigmatic ***Nehalennia gracilis*** – whose county remains unknown! (Memo to photographers: always record the locality!). Omar Bocanegra has found the first ***Somatochlora tenebrosa*** from Texas. Bob Behrstock and Sumita Prasad revisited Fort Clark Springs, Texas (the site of some frenzied collecting during the annual meeting in July) and present an impressive list. They found ***Tramea insularis*** and ***Argia rhoadsi*** – two of the rarest of North American odonates.

Roy Beckemeyer has another tale of travels to exotic places - - this time Peru. Gary Sprandel describes huge migrations of ***Anax junius***, and three species of skimmers, in Florida. His account of nighttime roosting sites is especially interesting .

José Ramos continues his studies of Cuban odonates with an listing of the insect food of three species of damselflies from this island. Bryan Pfeiffer tells of a ***Sympetrum*** with unrealistic expectations regarding a ***Dromogomphus spinosus***. I doubt that many can match this tale.

Bob Honig lists a large number of odonates that visit and/or breed in his backyard ponds in Houston. The catch is that his ponds are full of fish! He sent me some photos of these ponds, which almost make me want to move back to Houston. Almost.

Jane Walker and Joe Smentowski sent in a clipping from a birder's magazine that describes an egret greedily gulping down dragonflies.

Two organizations are featured in this issue. A newly organized Vermont group will, I hope, survey a very poorly inventoried state. The Toronto Entomologists Association is expanding from its former interest in Lepidoptera to include Odonata.

Newspapers and magazines are increasing their coverage of dragonflies and the people that study them. Articles from the Naples (FL) Daily News and the Roswell (NM) Journal features several of our members as they tell their readers what all the excitement is about. A recent issue of Smithsonian magazine also featured the superb site at Roswell. Not to be outdone, the Chico (CA) Examiner has articles by two of our members.

I review two major books in this issue. Jill Silsby's "Dragonflies of the World" ought to be on everyone's desk (or coffee table, if you prefer). The monumental "Dragonflies of the Japanese Archipelago in Color" probably won't be on many desks because of its price, but it will quickly be recognized as the definitive book on the Japanese odonate fauna.

We close the issue with a sad note – the deaths of Jean Belle, who contributed so much to our understanding of Neotropical gomphids, and Pastor Alayo, who was one of the fathers of Cuban Entomology, and who had a special interest in odonates.

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

Calendar of upcoming field meetings

dates	place	contact
29 – 31 March	Pensacola FL	J. Daigle <jdaigle@nettally.com>
16 – 19 May	S.W. Arkansas	G. Harp <glharp@mail.astate.edu>
20 – 28 June	West Virginia	J. Wykle <jwykle@mail.dnr.state.wv.us>
1 – 4 July	Roscommon MI	M. O'Brien < mfobrien@umich.edu>
12 – 14 July	Tug Hill Plateau NY	T. Donnelly >tdonnel@Binghamton.edu>

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

2002 DSA MEETING- ACCOMMODATION INFORMATION

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

June 20-22, **Lewisburg WV**: $54.00 for double room at **Brier Inn** (304-645-7722) –20 rooms have been blocked off. (see last issue of **ARGIA** for more lodging options)

June 23-25, **Elkins, WV**: $44-46 for double room at Super 8 (304-636-6500)-blocked off 15 rooms. Other lodging options in Elkins:
Travelodge (across the street from Super 8)- 304-636-7711
Days Inn - 304-637-4667
Cheat River Lodge - 304-636-2301
Elkins Motor Lodge - 304-636-1400
Stuart's Recreation Area (camping) - 1-877-444-6777
Alpine Shores Campground - 304-636-4311

June 26-28, **Pt. Pleasant, WV**: In the last Argia I had stated that we were going to be staying in Parkersburg. I hope this isn't inconvenient, but it would be better for us to stay in Pt. Pleasant. The Division of Natural Resources has a cabin that sleeps 18-20 on McClintic Wildlife Management area - one of the places where we will be collecting Odonates. Towels and sheets are provided. There is a grassy area next to the cabin to pitch tents as well. For those of you wishing to stay in a hotel, the town of Pt. Pleasant, WV/ Gallipolis, OH is only 10 minutes away. We are located only 20 minutes from Greenbottom Swamp, the largest wetland in WV and minutes from the Kanawha River, a tributary of the Ohio. We are also an hour from the Ohio River Islands near Parkersburg.
Lowe Hotel - 304-675-2260
Mason Hotel - 304-773-9000
Budget Inn - 740-446-7071
Holiday Inn - 740-446-0090
Super 8 Motel - 740-446-8080

All of the meeting information will be available on the web in March, if not before. The format will be similar to the information posted for last year's meeting (thanks John) where you can sign up and see who is attending. I will send out the website address via email and/or the next **ARGIA** when it is ready.

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

UPDATE ON 2002 SE MEETING IN FLORIDA

Jerrell J. Daigle, jdaigle@nettally.com, tel. 850-878-8787

Here is the latest accommodation information on the 2002 SE meeting at Eglin Air Force, Florida. We will be staying at the Friendly Inn, 626 John Sims Parkway in nearby Niceville (904/678-4164) from March 29-31. Afterwards, we will stay in Monroeville, Alabama. Steve Krotzer recommends the Knights Inn (334/743-3154) with the Monroeville Inn (334/575-3312) as a backup. Both places will hold rooms for us. Later we will travel to Hamilton, Alabama and stay at the Country Health Inn (205/921-7831) recommended by Ken Tennessen. The dates of the Alabama sidetrip will be from April 1-8. If you plan on attending all or part of this meeting, please let me know and I will answer all your questions. Thanks and I hope to see you there!

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

MIDSOUTH ODONATA MEETING, 16-19 MAY 2002

George L. Harp, Dept. of Biol. Sciences, P.O. Box 599 Arkansas State University, State University, AR 72467 Ph.: 870 972-3082, FAX: 870 972-2638, glharp@mail.astate.edu

Roy Beckemeyer and John Abbott want to pursue ***Gomphus oklahomensis*** in SW Arkansas, so I have arranged with the Ouachita National Forest aquatic biologist to acquire permitting and guide us to some great spots. Other species flying during this period are ***Cordulegaster maculata, C. obliqua***, and Ken Tennessen's undescribed species, plus several ***Macromia*** spp., ***Neurocordulia virginiensis, N. xanthosoma***, and endemics such as ***Gomphus ozarkensis, Ophiogomphus westfalli*** and ***Somatochlora ozarkensis***. We will gather Thursday evening, 16 May, search nearby spring seeps, Caddo River and tributaries, lakes and ponds on Friday and Saturday. If we haven't found

many ***G. oklahomensis*** by then, Sunday we will go to a lake about 75 miles SE of Glenwood, where I have caught many. Alternatively, on Sunday, for those who choose to do so, we can go SW to Red River country and search for ***Somatochlora margarita***, which would be a new record for Arkansas.

Glenwood, AR, will be our location for the meeting.

Accommodations:

Riverwood Inn (870 356-4567) Single ($47), double ($55) (nice)

Ouachita Mtn. Inn (870 356-3737) Single ($47), double ($47) (nice)

Lux Motel (870 356-3151) Single ($36) double ($42) (remodeled; okay; has a great breakfast restaurant)

If you are interested in this meeting, please contact me.

=¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦=

2002 GREAT LAKES ODONATA MEETING - 1ST ANNOUNCEMENT

Mark O'Brien

The second Great Lakes Odonata Meeting will be held July 1-4, 2002 at the Ralph A. MacMullen Center (RAM Center) located at Higgins Lake, near Roscommon, MI. This event will be an opportunity for Odonata enthusiasts in the Great Lakes Region to meet and share information, as well as experience some of the habitats in northern Michigan and the Odonata species living there.

GLOM 2002 will begin in the evening of Monday, July 1, and end the morning of July 4. Participants staying at the RAM Center in double occupancy rooms can expect to pay approximately $172.00 per person for three nights lodging, which includes meals. Our proposed schedule of activities includes day trips to selected sites within 1.5 - 2 hr radius of the RAM Center, evening programs and workshops.

A registration form will be available soon, and I encourage anyone planning to attend to register well before June 1, 2002, as space is somewhat limited. For those not wishing to stay at the RAM Center, there are camping facilities close by as well as a number of motels within a short distance of the Center.

For more information or to be put on the mailing list for a registration form, contact Mark O'Brien via email at: mfobrien@umich.edu or call 734-647-2199. You can also send mail to me at: Insect Division, Museum of Zoology, University of Michigan, Ann Arbor, MI 48109-1079.

Additional updates on the meeting will be available on the web at:

http://insects.ummz.lsa.umich.edu/GLOM2002/

=¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦=

NORTHEASTERN DSA MEETING IN TUG HILL PLATEAU, NEW YORK, JULY 2002

Nick Donnelly, tdonnel@binghamton.edu; 607-722-4939

The Northeastern DSA 2002 field meeting will be held in the Tug Hill Plateau, New York, on 12-14 July, 2002. The headquarters for the meeting will be in Watertown, New York, at a motel still to be determined.

The objective of this meeting will be to explore a very little surveyed wilderness in north-central New York. The Tug Hill is a topographic extension of the Adirondack Mountains, but it receives far more precipitation because of its proximity to Lake Ontario, which supplies it with "lake effect" snow and rain. It is the Northeast's "Rain Forest". The center of the plateau is almost uninhabited and has been lumbered for several decades. Because of the phenomenal snow fall (highest in the US east of the Rockies) is has become a snowmobile mecca. The plateau abounds in aquatic habitats of all types, including bogs, marshy ponds, and small to medium sized streams.

Odonata activities will include at least one full day on the plateau, either Friday or Saturday, depending on the weather. The other day will be spent exploring the lower portions of one of the large streams that flow from the plateau (eight rivers begin here). On Sunday participants can stop at one of several inviting places on their way home, including St Mary's pond and bog (near Parish) or the marshy inlets of Lake Ontario.

This trip will be an ideal opportunity for beginning Odonatists, and we invite their participation.

=¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦=

REPORT OF THE 15TH INTERNATIONAL SYMPOSIUM OF ODONATOLOGY HELD IN NOVOSIBIRSK, RUSSIA

Kiyoshi Inoue, President, International Odonatological Foundation S.I.O.

The 15th International Symposium of Odonatology was held in the House of Scientists, Academy Town, Novosibirsk, Russia during July 9-19, 2001. It was organized by the Siberian Branch of the S.I.O. headed by Prof. Dr A.Yu. Haritonov. Workers from 8 countries registered, and some 40 participants enjoyed the very cozy venue surrounded by woods: many ***Aeshna affinis*** and

Sympetrum flaveolum were seen flying during a short walk from the hall to the "Golden Valley Hotel".

The oral and poster presentations included papers on biology, ethology, taxonomy, cytotaxonomy, morphology, physiology, biogeography, paleontology and conservation. The work of the many dedicated and hard working odonatologists of the young Russian generation was most impressive, their presentations are highly important. One of their recent achievements is the discovery of the conspecifity of the Siberian and Amurian ***Calopteryx virgo*** with the Japanese ***C. japonica***.

The Odonata Specialist Group Meeting of the Species Survival Commission, I.U.C.N. was chaired by Dr J. van Tol, and a vast knowledge on conservation status of the Russian fauna opened a new page in the history of the conservation meetings.

We visited the northern part of Novosibirsk Province in the Mid- symposium Trip, and Altai Mountains in the Symposium Tour. The weather was fine everyday, and many species, including ***Aeshna crenata, Stylurus flavipes, Macromia amphigena fraenata,*** and ***Somatochlora graeseri***, were found.

During the Symposium, a new organization, "S.I.O. Regional Office in East Asia (SIOROEA)" was established in order to facilitate mutual contacts, discussion and research on East Asian fauna. At present, it consists of five Branches: China, Japan, Korea, Siberia and Taiwan. The first SIOROEA Symposium will take place in the National Science Museum in Daejeon, Korea during July 26-29, 2002 organized by Dr S.-M.Lee. It includes a Mid-symposium Trip, where collecting and bringing out is permitted. All interested workers in the East Asian Odonata, whether or not residents of East Asia, will be warmly welcomed.

The forthcoming 16th International Symposium of Odonatology will take place in Schwerin, Germany, during July 26-August 4, 2004, invited by Dr Wolfgang Zessin. Traditionally, since 1971, the International Symposia of Odonatology were convened in odd-numbered years. In order to avoid overlapping with the recently started WDA meetings, it was decided to postpone the 16th International Symposium of Odonatology until 2004, after which the Symposia will continue in the traditional 2-year intervals.

On the occasion of the Novosibirsk Symposium, the first issue of a new semiannual periodical "Belyshevia, Journal of the S.I.O. Russian Branch" appeared. The editor-in-chief is Dr. A. Yu. Haritonov. It contains 5 papers in Russian with English summaries. Subscription orders are accepted by the Editors of Odonatologica, in Bilthoven, the Netherlands.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

2ND WDA INTERNATIONAL SYMPOSIUM OF ODONATOLOGY, JULY 22-27, 2001

Vicky McMillan

Last summer Rob and I, along with our four children, traveled to the far reaches of northern Sweden to attend the 2nd symposium of the Worldwide Dragonfly Association. Hosted by Goran and Anna Sahlen, the conference was held in the small mining town of Gallivare, about 100 km north of the Arctic Circle, deep within the vast wilderness of Lapland. For us, the journey to Gallivare proved to be an adventure in itself. After flying from New York to Stockholm via London, we boarded a night train that took us first through farm country not too unlike home, but soon plunged us into the immensity of the boreal forest, past endless stretches of coniferous and birch forests and countless rivers and lakes.

As we traveled north towards the Arctic, towards the land of the midnight sun, we brought the daylight with us. Although we were about a month past the longest day, it never really got dark throughout the long train ride, though fortunately the windows of our sleeping compartment had thick shades, so we were able to catch a few hours of jet-lagged sleep before arriving in Gallivare early the next morning.

The main venue for the symposium was a small conference center, the Folkets Hus, in the center of town, located across the street from the Grand Hotel, where most participants stayed (and where some people tried out the saunas, located on every floor). As always, participants represented many countries -- from the USA and England to Japan, Egypt, Australia, Spain, Germany, the Netherlands, Belgium, and many others--and conference presentations ranged from papers on systematics, morphology, physiology, behavior, faunistics, ecology, biodiversity, and conservation. Two larval workshops were also featured, along with a wide range of informal presentations and a well-attended poster session devoted to topics ranging from the mapping of Turkish odonates, to sperm competition in ***Platycnemis***, to dragonflies and stamps.

The Plenary Seminar, led by Philip Corbet, was this time devoted to larval ecology and the effects of temperature on development, with an introductory presentation by Ulf Norling on survival tactics of odonates at high latitudes. Between presentations and other events, we gathered in the lobby of the Folkets Hus for *fika* breaks—coffee, snacks, and

conversation. Meanwhile our children—aged 18-22—watched Swedish TV shows, explored the shopping areas of Gallivare, and spent hours at a nearby cyber café.

We had packed ample supplies of mosquito repellent, and while mosquitoes were sparce in Gallivare, they were, as Goran had warned us, a prominent feature of most of our field trips. Nevertheless, the spectacular Lapland scenery kept most participants distracted. The Mid-Symposium Tour took us on a long bus ride into the boreal wilderness, past snow-covered mountain ridges and tundra-like bogs into the land of the northernmost dragonfly in the world, ***Somatochlora sahlbergi***. Some people hiked, while others opted for a short helicopter ride to higher elevations. Although heavy rain drove many of us hikers indoors into a small tourist center (and into the saunas, wet clothes and all), we enjoyed good conversation along with waffles with cloudberries while we waited for the weather to clear.

Other field excursions included a short ride on the scenic inland railway, a visit to the world's only mosquito museum, in the Sjaunja Marsh, and a tour of a Sami (Laplander) village. There we were greeted by guides wearing traditional dress and were served cloudberries and a juniper drink along with flatbread and delicious smoked trout. Although participants spotted very few dragonflies, many of us were thrilled to see our first "wild" reindeer, which are much stockier than we'd realized—not at all like the standard Santa Claus depictions.

We couldn't attend the Post-Symposium Tour, which left from Stockholm for numerous odonate and cultural sites in central and southern Sweden, but Jann Vendetti reports that the weather was warm and sunny, and odonates were abundant, especially around Upsulla and Stockholm.

The 3rd WDA International Symposium of Odonatology is scheduled for January, 2003, in Australia.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

THREE NEW SPECIES OF ODONATA FOR SASKATCHEWAN, CANADA

Gordon Hutchings, 971 Arundel Drive, Victoria, British Columbia, V9A-2C4, CANADA
sea-trek@islandnet.com

Since 1998, I have concentrated my entomological, including odonatological, interest in the Canadian province of Saskatchewan. Saskatchewan lies two provinces and 2000 kilometres east of where I live on Vancouver Island here in British Columbia, north of Washington State. I am leaving my home in the coastal coniferous rain forest for the prairie and boreal forest ecozones, for which Saskatchewan is famous.

My first visit to Saskatchewan blew me away. The potential I saw for studying aquatic insect diversity was incredible. Comparison of these insects with the fauna of my home province was high on my list of things to do.

Saskatchewan is renowned for its grain production and uranium mining, but what people don't realise is just how much of the northern half of the province consists of wetlands. Many diverse and impressive aquatic environments cover the land north of 53° N, and these stretch northward past the Northwest Territories border where the Taiga Shield begins. The northern part of the province is made up of the Boreal Plain and Boreal Shield ecoregions, covering 27% and 28% of the provincial land area (368,671 square kilometres), respectively. Much of this boreal ecozone is dominated by wetlands ranging from tamarack/black spruce bogs to large lakes and good-sized rivers. It is an aquatic entomologist's dream -- or nightmare -- if you think you can cover it all in a lifetime and document all its insects.

To some, the nightmare would be the sheer biomass on the wing surrounding any person (or mammal, for that matter) standing proud on the horizon. Warm blooded animals are targeted by a never-ending onslaught of biting insects. To me, this is excellent, just what I've come here to witness -- an intense season of flying bugs, peaking from mid-June to mid-July. The tabanids here are incredible! They circle you in ceaseless concentric paths, coming from all directions, routinely banging into each other and pinging off your net handle. For those that have not had this experience, you'll simply have to imagine what it's like. Leaving my hot vehicle on the roadside, I venture off on a GPS bearing to find an open pool in a black spruce bog. Upon my return several hours later, the flies have not in any way diminished in their obsessive attraction to my truck. The noise of their beating wings is the loudest thing out here in the wilderness. You may be thinking that this naive city-slicker doesn't get out in the bush much -- but I have tramped tropical jungles and have often collected in northern British Columbia. I know when biting bugs are wicked. The Canadian boreal forest definitely ranks up there with the worst (or best) in the world.

I have been concentrating my efforts on dragonflies, for I'm familiar with this order of insects and have a fairly good handle on the 62 species already documented from Saskatchewan. I am working on an insect survey of Prince Albert

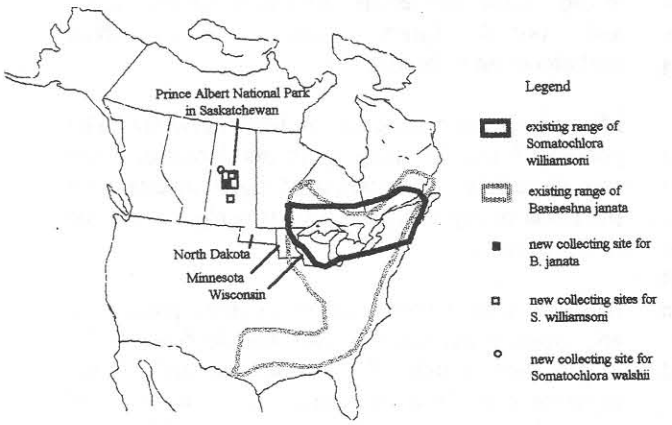

Fig. 1 Presently known ranges for ***Basiaeschna janata***, ***Somatochlora williamsoni***, and ***S. walshii***

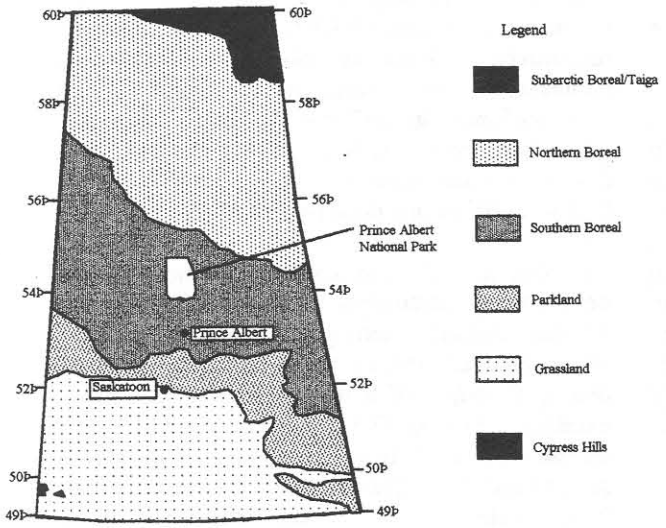

Fig. 2 Ecological regions of Saskatchewan

National Park, a famous protected area established in the late 1920s. This park was one of the wilderness bases of Archibald Belaney, an Englishman known as Grey Owl, who masqueraded as an Indian, researched the habits of beavers and was one of the founders of the conservation movement in Canada. I have made strides in documenting new dragonfly records here, but, this past summer, I stumbled upon three species that were entirely new to the province. One of these represents a genus new for Saskatchewan!

On 30 June 2001, at a rich fen bordering a pond in the middle of the park, I found a hawking male aeshnid feeding among several other dragonflies. Its features didn't match anything I had seen before or any species on the list of aeshnids from Saskatchewan, so I knew I had something new. When I got back to my camp and consulted my books, I discovered I had collected ***Basiaeschna janata*** -- not only new to Saskatchewan, but to Western Canada. Two days later I collected a female over the species' typical habitat --some riffles on Waskesiu River, which drains out of the large Waskesiu Lake, also in the park. These two sites were directly across Waskesiu Lake from each other at 53° 56'N x 103° 15' W, about 1° north and 8° west of previous records near the southern border of Manitoba and Ontario. Dennis Paulson collected a female specimen east of the town of Lac du Bonnet, Manitoba, on 5 June 1982. For those not familiar with Saskatchewan's location in North America, the documented range of ***B. janata*** is shown in Figure 1. This new extension is substantial and on a par with the distance between, say, North Dakota and Wisconsin, or approximately 800 kilometres (500 miles).

The fun wasn't over, though. I was in hot pursuit of as many bogs as I could find. I wanted to explore the north end of the park, but it was virtually inaccessible without a helicopter. I opted to drive as far north as I could, just near the park boundary, and try to walk as close as possible to a large bog complex that spread well outside the park. After two kilometres of trudging knee-deep through an endless bog spotted with black spruce, I stopped at an open pool and gave it a go. I collected a good variety of dragonflies typical for this area, such as ***Coenagrion resolutum, C. interrogatum, Enallagma boreale, Nehalennia irene, Aeshna eremita, Cordulia shurtleffi , Somatochlora franklini*** and ***Leucorrhinia proxima.*** It was here on 2 July that I collected one female ***Somatochlora walshii***, which was new to the province. I had assumed this species would show up in Saskatchewan because it is known from both west in Alberta and east in Manitoba -- but, anyway, it was a new, confirmed addition to the province.

On 7 July, I checked out another bog, just south of the park near the town of Prince Albert, that I had been informed about earlier. This place excited me most of all. You see, my favourite genus of dragonflies is ***Somatochlora***, and it was here that I discovered a special one -- a third new species to the province. I found a healthy population of ***Somatochlora williamsoni***, with many actively patrolling males, ovipositing females and copulating pairs, at a little otter run entering a lake in this bog. This little trough of water through the moss was no more than two metres across and about a metre deep, and lay under the dense cover

of spruce trees. At first I didn't know what I had but I sure knew it wasn't on the list! When I got back to a phone I called Syd Cannings in Victoria. Syd had Walker's identification keys handy and guided me through them until we confirmed that the species was ***S. williamsoni***. Wow! Another range extension of similar magnitude to that of *B. janata*! This ***Somatochlora*** was also previously known only as far west as the Manitoba/Ontario border country. Back in the park again, I collected one lone, hawking male at Kingsmear Lake - it was nice to include ***S. williamsoni*** on the park list.

I'm looking forward to more explorations in Saskatchewan. There is so much more to learn about this fantastic, vast, wet province. I am currently planning to visit Athabasca Sand Dunes Wilderness Park in the far northwestern corner of Saskatchewan, around 59°N latitude. This is an area little explored for insects, and I hope that there, especially, I can add to the province's dragonfly species list.

I thank Dennis Paulson and Nick Donnelly for information on the distribution of ***Basiaeschna janata***. Rob Cannings commented on a draft of the manuscript.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

LARGE NUMBERS OF *AESHNA INTERRUPTA* IN SOUTHEASTERN SASKATCHEWAN

Paul M. Catling and **Vivian R. Brownell**, 2326 Scrivens Drive, Metcalfe, Ontario K0A 2P0
brownell@achilles.net

Observations of thousands of dragonflies within a few hours in a relatively small geographical area are uncommon. During a drive across much of southern Canada during 2001 this kind of observation was made in only one area, the Grenfell - Whitewood area of southeastern Saskatchewan.

The drive was interesting because it permitted an assessment of general dragonfly abundance on the landscape across much of the southern part of the country. The route was mainly the Trans-Canada highway from Ottawa in eastern Ontario to coastal British Columbia at Vancouver, and it traversed eight ecozones. Detailed observations were made at frequent stops. Several hundred km were covered each day and all days were sunny or mostly sunny. The drive out was between 18 and 28 June, and the return trip was from 12 July to 22 July.

On 18 July, approx. 2000 ***Aeshna interrupta lineata*** were seen in mid morning flying over the largely agricultural prairie landscape while we drove west from Grenfell and north on highway 47 to the Qu'Appelle River. At the river the numbers increased and near noon over a thousand were observed within 15 minutes flying west along the river. During this period up to 100 were visible at one time. During the drive through the Qu'Appelle valley approximately five thousand were seen while driving less than 50 km within a period of one hour and approximately 300 were seen dead on the road as a result of collisions with vehicles. The road mortality must have been much greater than that observed since the wind would have carried many into roadside vegetation. About 2000 more were seen while driving through 50 km of agricultural land near Whitewood, with up to 50 seen at one time. Mostly they occurred in groups of 10 or less. Seldom more than a few seconds passed without an adult ***Aeshna interupta lineata*** being seen. On the Trans-Canada highway at Whitewood, adults flew over a motel and restaurant parking lot where a few hundred individual were on the ground having fallen from the parked cars. All parked cars had dragonflies on the front, the numbers ranging from 2 to 25 far exceeding any other insect in abundance. With such large numbers, ***Aeshna interrupta lineata*** must have a very significant influence on the prairie ecosystem as both predator and prey. This influence as a very abundant species extends far beyond our observations to the boreal forest region. Walker (1958) noted **that *A. interrupta lineata*** was the dominant ***Aeshna*** of the Canadian Great Plains and boreal forest to the north, far outnumbering all of the other species of ***Aeshna*** taken together and he reported hundreds in flight on 9 July at The Pas, Manitoba. Much farther to the south, Kennedy (1917) described its abundance in central California (under ***nevadensis***).

Kennedy. C.H. 1917. Notes on the life history and ecology of the dragonflies (Odonata) of central California and Nevada. U.S. Nat. Mus. 52:483-635.

Walker, E.M. 1958. The Odonata of Canada and Alaska. vol. 2, part III: The Anisoptera - four families. University of Toronto Press. 318 pp.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

SOME GREAT PLAINS ODONATA RECORDS FOR 2000 AND 2001

Roy Beckemeyer

KANSAS: Sedgwick Co., N. Fk. Ninnescah River below Cheney Dam, ***Epitheca costalis*** ♂, ***E. petechialis*** ♂, 16 May, 2001, Roy Beckemeyer. Montgomery Co., Elk City Lake, ***Didymops transversa*** ♂, 7 May, 2001. STATE (No county recorded, no date recorded), photo of ***Nehallenia gracilis*** taken by Stephan C. White in southeastern Kansas and published in "Insects in Kansas", 3rd

edition, S.C. White & G. A. Salsbury, Kansas State Board of Agriculture, 2000 (p. 52).

OKLAHOMA: Noble Co., Perry, 0.5 mi S, E. of Hwy. 77, by Roy Beckemeyer, 11 July 2001: ***Argia plana*** ♂, ***Ischnura verticalis*** 2♂, ***Gomphus militaris*** teneral ♀, ***Dythemis fugax*** ♀, ***Erythemis simplicicollis*** ♀. ***Libellula luctuosa*** ♀, ***Plathemis lydia*** ♀.

NEBRASKA: Sarpy Co., Schramm S. P., ***Gomphus vastus*** ♂, photos by John Sullivan, taken 14 June 2000, identification verified and prints in the collection of Roy Beckemeyer. Dodge Co., ***E. signatum*** ♂,♀, collected by Janis and Don Paseka, 9 July 2001.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

FIRST RECORD OF *SOMATOCHLORA TENEBROSA* FOR TEXAS

Omar R. Bocanegra, U.S. Fish and Wildlife Service, 711 Stadium Drive, Suite 252, Arlington, Texas 76011

On June 8, 2001, I visited east Texas to look for ***Somatochlora margarita*** in the national forests. Accompanying me on the trip were co-worker Jeff Reid of the U.S. Fish and Wildlife Service's East Texas Sub-office, U.S. Forest Service biologist Dave Peterson, and John Morse, a graduate student at the University of Texas at Arlington. We brought along a .22 caliber rifle loaded with rat shot since this species, as well as most ***Somatochlora***, are notorious for flying above forest canopy level.

We collected at Bannister Wildlife Management Area in the Angelina National Forest on the Friday before tropical storm Allison produced massive flooding in much of southeast Texas, including the Houston area. It was a rainy morning, however, there was still some odonate activity as the dense pine forest lessened the impact of the rain at ground level.

We began to see ***Somatochlora*** flying over the roads and managed to bring one female ***S. linearis*** down with the rifle. Later that afternoon the sun made an appearance and we noticed what appeared to be a ***Somatochlora*** species flying about two feet off the dirt road in an "up and down" pattern (similar to the flight of ***Argia***, only much faster). This pattern became a regular occurrence as the ***Somatochlora*** made use of the roads to travel through the forest. By standing in the middle of the road with about 40 feet between us, we were able to make up to four attempts at catching each one that passed us along the road.

Our first catch was a male ***Macromia illinoiensis***, but shortly after we caught the second ***Somatochlora*** of the day: a male ***S. tenebrosa***. We continued collecting in this manner and netted five male ***S. margarita***. We also collected or observed ***Tramea carolina, T. lacerata, Epiaeschna heros, Cordulegaster obliqua, Tachopteryx thoreyi, Pachydiplax longipennis, Erythemis simplicicollis, Calopteryx maculata, Pantala hymenaea, Celithemis eponina, Anax junius***, and ***Epicordulia princeps***, for a total of 16 species, 11 of which are apparently new records for San Augustine County, Texas.

According to John Abbott's Odonata Central website, the ***S. tenebrosa*** record nearest to Texas is from Montgomery County, Arkansas. There are also records from Oklahoma, but none from Louisiana. This is a significant range extension for this species, which has probably been a part of the Texas fauna for a long time but eluded capture. In addition to the three ***Somatochlora*** species this trip produced, ***S. georgiana*** and ***S. filosa*** have also been documented in Texas. The specimen was verified by James Robinson and deposited in my personal collection.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

ODONATE SPECIES OBSERVED AT FT. CLARK SPRINGS, BRACKETTVILLE, KINNEY CO, TX: 7/8 SEPT. 2001

Bob Behrstock & Sumita Prasad

Because we missed the DSA fieldtrips after the Junction, TX meeting in July, we visited Fort Clark Springs, Kinney Co, TX, during the late afternoon and early evening of 7 Sept. and all day on 8 Sept. 2001. Temperatures were high, and the sky was partly cloudy but bright. The 9th of September began with heavy clouds and light rain, and we did not continue to pursue odonates.

Of particular interest for both birds and odonates were the large marsh/swamp and the adjacent picnic area/live oak grove along Las Moras Creek in the southeastern portion of the property (red bridge vicinity). There, ***Argia rhoadsi*** was especially common in emergent aquatics, marsh-side weedy growth, low grasses, and on and around trees. The Las Moras Creek crossing at Travis Road produced few ***rhoadsi***, mainly tenerals. The absence of several ordinarily common and widespread skimmers including ***Libellula luctuosa***, ***L. lydia***, and ***L. pulchella*** seemed curious.

The main areas investigated, as suggested by Dennis Paulson, were: (P) the large, spring-fed, vegetated pool adjacent to the swimming pool, ***Tramea insularis*** had been found there during the DSA convention; (L) various sites along Las Moras Creek; (W) the weedy ditch across the dirt access road from the abovementioned vegetated pool

where ***Cannaphila insularis*** had been found during the DSA convention. The following 30 species were observed, several photographed by Behrstock, more by Prasad:

Common Green Darner (***Anax junius***) (ubiquitous, common, several mating pairs & ovipositing females); Flag-tailed Spiny-leg (***Dromogomphus spoliatus***) (L, P-where one taken by ***Anax***, about 8 total) Eastern Ringtail (***Erpetogomphus designatus***) (L-copul. pr only), Russet-tipped Clubtail (***Stylurus plagiatus***) (L-1 female) (Photo identified by Sid Dunkle-Thanks); Narrow-winged Skimmer (***Cannaphila insularis***) (W-about 8 territorial males perching 2-4' above ground, typically at a hanging oblique angle on tall grass stems, infrequently perched horizontally on sticks, occasionally on low branches or emergent aquatics over water; most active mid-day; no females observed); Black Setwing (***Dythemis nigrescens***) (P-at least one or two males); Swift Setwing (***Dythemis velox***) (P, L, W-small numbers at each); Eastern Pondhawk (***Erythemis simplicicollis***) (P-common, territorial at pool edge's concrete border); Roseate Skimmer (***Orthemis ferruginea***) (W-1 male); Blue Dasher (***Pachydiplax longipennis***) (P-common); Wandering Glider (***Pantala flavescens***) (P-about 5); Spot-winged Glider (***Pantala hymenaea***) (P-about 10, a few elsewhere);
Antillean Saddlebags (***Tramea insularis***) (P-2 males, over center of pool, chased or associated with mating pairs of the larger and more boldly marked ***T. onusta***; stayed beyond net reach); Black Saddlebags (***Tramea lacerata***) (P-at least a dozen, several mating pairs, L- a few); Red Saddlebags (***Tramea onusta***) (P-at least a dozen, several mating pairs, L- a few);
American Rubyspot (***Hetaerina americana***) (L-widespread, but sparsely distributed along the creek); Smoky Rubyspot (***Hetaerina titia***) (L-as above but more common); Variable Dancer (***Argia fumipennis violacea***) (W-a couple males where creek flow greatest); Kiowa Dancer (***Argia immunda***) (W- 3 or 4 where creek flow greatest); Powdered Dancer (***Argia moesta***) (L -1 male on a rocky riffle); Dusky Dancer (***Argia translata***) (L, mainly; a couple dozen, several mating pairs, a few elsewhere); Golden-winged Dancer (***Argia rhoadsi***) (L, W- common, noted at most sunny spots along the creek, 10+ at the ditch, also common in low vine tangles surrounding the bases of live oaks in the picnic area near Las Moras Creek. Mostly females/tenerals noted; but plenty of bright males were around. A few ***rhoadsi*** at W until at least 7:40 p.m.); Blue-ringed Dancer (***Argia sedula***) (ubiquitous, same habitats as ***rhoadsi*** but more common); Double-striped Bluet (***Enallagma basidens***) (L-1 or 2 in grasses near swamp); Familiar Bluet (***Enallagma civile***) (W, L, P-sparse, more common [10+] on the few emergent sticks at P); Stream Bluet (***Enallagma exsulans***) (W-about 20, L-a few); Arroyo Bluet (***Enallagma praevarum***) (W-common, P-a few on emergent sticks, L-common); Orange Bluet (***Enallagma signatum***) (P-a couple mating pairs on algal mats); Neotropical Bluet (***Enallagma novaehispaniae***) (ubiquitous, especially at W [dozens], most common damsel present; many mating pairs noted); Desert Firetail (***Telebasis salva***) (P-a few pr, W-common-10+)

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

DRAGONFLIES IN THE LAND OF THE INCAS

Roy Beckemeyer

In November of 2000 my wife, Pat, and I joined another couple and a fifth friend in planning a trip to the high Andes and upper Amazon basin of southeastern Peru. All of us are acquaintances from the Kansas Ornithological Society, and our friend Roger had planned this trip as the last in a series of South American visits he was to make in 2000 as part of his sabbatical year. He had a goal of seeing 1000 bird species in 2000 and to get his life list up to 2000 birds (he met his goals).

As Pat and I had never been to Peru, we decided to go on our own several days in advance and visit Machu Picchu, that most wonderful of American archeological sites. We arrived in Lima on Oct. 31, late in the night, and took a cab to a hotel in the suburb of Miraflores. A few hours of sleep were all we had time for, as we had an early flight to catch for Cusco. This very old city that was once the capital of the Inca Empire is located at a very high altitude – 3326 meters – and one has to become acclimated to the altitude over a day or two before becoming comfortable. A lady in traditional Peruvian Andes dress meets you at the airport with a cup of *Mate de Coca*, coca-leaf tea, which is supposed to help with altitude sickness. I found it to be a nice drink that also helped to settle slight stomach upsets during the trip. After site-seeing in Cusco the rest of the day, we boarded the passenger train that goes up the Urubamba River valley to Aguas Calientes, the small village from which the bus rides up to the ruins can be caught. As hard as it was to believe, a little trackside restaurant in Aguas Calientes had excellent *Ceviche de Corvinos* – white sea bass marinated in lime juice, chilis and onions. It was so good that I ate almost nothing else while at Machu Picchu. The *ceviche* is even better when washed down with a bottle or two of Cuzquena, a nice Peruvian *cerveza* (beer). Machu Picchu is a marvelous place, and a photo-buff could easily spend a couple of days photographing them in the ever-changing lighting. The rock-work is awe-inspiring, and it boggles the mind to think how

much work went into making the rocks fit together with such intricate precision.

Many colorful butterflies and birds were all around us in Aguas Calientes, and we took binoculars and cameras everywhere. I didn't collect dragonflies at the ruins (saw only a ***Pantala flavescens*** flying about at the ruins proper), but did some collecting around the village. We saw our first Polythoridae – a female perched high up in the branches of a tree – at our cabin in the village. Later, on a hike along the railroad tracks, I came across ***Cora cf. terminalis***, a blue-faced polythorid damselfly with green and black thorax, and with brilliant fluorescent blue flashes coming from the wings when the light hit them just right. After a few pictures, I managed to catch it by hand (hadn't taken along my net). Then I saw my first Megapodagrionidae, a ***Megapodagrion sp.*** male perched with his wings outspread (this genus is being revised by Jurg DeMarmels, and the specimen is a species assigned to one of his new genera). I photographed this species, then caught one by hand as well. Also saw a purplish ***Argia*** pair in tandem, but couldn't get close enough for pictures or to catch them.

We returned to Cusco on the evening of the 3rd of November, and the views of the lights of the city of Cusco as our train descended into the valley were quite memorable. The next day found us touring the Sacred Valley and doing some sight-seeing and shopping. I saw and took a rather poor photograph of an aeshnid at the ruins of Sacsayhuaman, a huge Inca fortress that had overlooked Cusco. Dennis Paulson thought that the dragonfly might possibly have been a ***Marmaeschna sp.***, although the photo, taken with a 400 mm lens as the insect perched high up on a rock wall, was not very clear.

On Nov. 5th we met with the rest of the group, and went off for a trip to Huacarpay Lakes, a high-altitude (3000 meter) marshy area. The lakes were low and were surrounded by muddy, grassy flats over which flew hundreds of blue aeshnids. There were patrolling males as well as pairs *in copula*. The males were all flying within a foot or two off the ground. I eventually captured a total of six males. These were thought to be ***Aeshna diffinis***, but after seeing Nathalia von Ellenrieder's recently published work in Odonatologica on the Aeshna of Patagonia, it appears that the species is likely ***Aeshna absoluta***.

The next day we left for our extended trip into the cloud forests that crown the Cusco to Atalaya road. The road skirts the southern side of Manu biological preserve, and is basically a one-lane gravel road. Most of the traffic goes out from Cusco on Monday, Wednesday and Friday, and back on Tuesday, Thursday and Saturday. We camped the first night, at Pillahuata (2800 m elevation). The next day we worked our way down from there to 1600 meters. I saw no Odonata that day, as it was cloudy and misty, but there were lots of extremely colorful butterflies almost everywhere along the road, most puddling on wet spots in the gravel. I have never seen such a diverse assortment of Lepidoptera. It was hard to look up from the road long enough to do any bird watching. I took roll after role of butterfly photos. Then, after seeing my first mountain tanagers, I was really hard pressed to know where to focus my attention. These birds are usually decked out in the most colorful plumages imaginable, and are lively enough to be more easily seen than many of the tropical birds. Add to the colorful fliers the green plants covering nearly every inch of mountainside and you have an unforgettable image of the incredible biodiversity of these pristine Andean cloud forests.

We arrived at our accommodations for the next three nights, Cock of the Rock Lodge, and enjoyed a nice hot shower (no electricity, but a solar-warmed water tank stood atop the bath hut) and hot meal that night. Early the next morning we quietly entered a blind in the dark to see the lodge's namesake, the Andean Cock of the Rock, an unlikely looking brilliant red bird. The males gather in groups in perches in the trees and call and display, hoping that their antics will attract females to the area for mating.

Then we were off to hike the road and trails around the lodge. Over the next several days I saw my first neotropical corduliid – ***Gomphomacromia cf. fallax***. Males of this species were seen perching alongside narrow roadside trickles beneath cliff sides that were covered with moss and dripping water. I watched females flying along the cliff and flicking their abdomens toward the moss, apparently ovipositing. I searched the moss for larvae, but was unsuccessful at finding any. I did collect a couple males. Other species taken in the area included a blue ***Argia*** and another Polythoridae species, ***Polythore boliviana.*** This large damselfly, with orange and black wings, proved to be quite elusive and difficult to catch on the misty day when I came across it, but I finally got pictures of a male and female, and took a male specimen. A libellulid that patrolled the same stream was the dashing ***Brechmorhoga rapax***. The butterflies and birds continued to make focusing one's attentions quite difficult. There were numerous clear-winged Ithomiidae butterflies, many fluorescent-blue Riodinidae, and, of course, the magnificent Morphos.

On November the 10th we continued down the road to Pillcopata and thence to Atalaya, which is about 500 m elevation and located on the banks of the Alto Madre de Dios River. From there it is a short boat ride down and across the river to Amazonia Lodge, a lovely place that was once banana plantation.

In this lowland forest, it was impossible to stay dry, and we would come back from a hike drenched with sweat. Fortunately, you could hang your wet clothes over the porch railing to dry, sit in a chair and drink glass after glass of lemonade, and rest for a couple of hours, then go out and do it all again. Birds here included Aracaris, Hummingbirds by the dozens, Macaws, Hoatzins, Potoos, and more Tanagers. I was hoping to see my first Pseudostigmatidae, and finally did get a fleeting glimpse of one, but it was so quickly out of sight that I was not sure what it was. There were some small streams and a little pond in the vicinity of the lodge, and I came up with three species of the coenagrionid genus ***Acanthagrion (ascendens, obsoletum***, and an unidentified species), a pretty little calopterygid that looked like a miniature Rubyspot with red wingtips, ***Hetaerina rosea***, an ***Argia sp.***, and a number of libellulid species: ***Dasythemis esmerelda, Macrothemis hemichlora, Macrothemis musiva, Micrathyria occipita, Orthemis cultriformis, Perithemis parzefalli,*** and ***Uracis fastigiata***. I also caught one gomphid at a small creek crossing the jeep trail, a ***Phyllogomphoides sp.*** There were lots of odonates in the area, and I might have seen more, but was sick for a day and a half of the three and a half days that we stayed at the lodge.

On the 15th we headed back toward Cusco, overnighting once more at Cock of the Rock Lodge, getting to Cusco late on the 16th. Our flight to Cusco got in early enough on the 17th to allow a quick trip south to the coastal fishing village of Pucusana, where there is a nice colony of an assortment of sea birds, including Peruvian Pelicans, Boobies, and Cormorants, and the strange-looking Inca Tern.

Our nearly three weeks in Peru seemed quite short. The combination of Andean and Amazonian forests, colorful and friendly people and ancient and fascinating archeological treasures with unparalleled beauty in the form of birds, butterflies and dragonflies make this a place to try to visit at least once in your life!

Thanks to Dennis Paulson for identifying specimens and photographs for me. Various photos from our trip can be found on my web site at: http://www.windsofkansas.com/peru.html

For travelers to Peru, I can recommend the following books: "Amazon Insects", 2000, J. L. Castner, Feline Press, Gainesville, FL; "Butterflies of South America", 1984, B. D'Abrera, Hill House, Victoria, Australia; "The Cloud Forest: A chronicle of the South American wilderness", 1987 paperback edition of 1961 book, P. Matthiessen, Penguin Books, NY; "Manu: The biodiversity of Southeastern Peru", 1996, D.E. Wilson & A. Sandoval, eds., Smithsonian Institution Press, Washington, D.C.; "Peru", Lonely Planet Travel Guide.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

FLORIDA MIGRATION TALES

Gary Sprandel, sprandg@fwc.state.fl.us
Florida Fish and Wildlife Conservation Commission, 620 S. Meridian St., Tallahassee, Florida 32399-1600

INTRODUCTION. For the last six autumns I have been observing dragonfly migration at St. Joseph Peninsula, Gulf County, Florida. This north-south peninsula is 24 kilometers (15 miles) long, parallel to the mainland. Due to the geometry of the peninsula and apparent avoidance of crossing open water, the dragonflies are flying north. Details of my observations for 1999 and site description are published (Sprandel, G. L. 2001. Fall dragonfly (Odonata) and butterfly (Lepidoptera) migration at St. Joseph Peninsula, Gulf County, Florida. Florida Entomologist 84(2): 234-238, available free at www.fcla.edu/FlaEnt/). This short note presents additional data from this site and anecdotal observations from Florida. The most prevalent migrant is ***Anax junius*** (Table 1).

The recent increase in ***Anax junius*** counts is probably due to visit timings and does not represent a population trend. This site is consistently used, but ***Anax*** numbers peaked in 2001, two days after the passing of a cold front. On some days the peak hour is just before sunset, perhaps a descent from higher elevations, but on only three occasions were dragonflies observed (with binoculars) flying at higher elevation than could be directly observed. Perhaps the evening flights represent final flights or feeding before roosting. In the evening of 2 October 1999 when the mosquitoes were thick and ***Anax*** were flying (Table 1), I allowed mosquitoes to bite my legs to see if I could attract dragonflies, and had six ***Anax*** pick mosquitoes from my leg. This is no longer recommended due to arboviral encephalitis.

ROOSTING AREAS. After peak flights in 2001, I spent pre-dawn hours searching for roost locations with a result of finding 25 individuals. Thirteen Anax junius, and 9 Pantala flavescens were found

Year (days)	*Anax junius*	*Tramea lacerata*	*T. carolina*	*Pantala flavescens*
1996 (1)	**1368** (12 Oct, 1pm)	-	-	-
1997 (3)	**2500** (10 Oct, 12pm)	-	-	-
1998 (6)	**408** (5 Sept, 1pm)	**180** (5 Sept, 12pm)	**24** (4 Oct, 10am)	**60** (4 Oct, 9am)
1999 (19)	**3297** (2 Oct, 7pm)	**228** (2 Oct, 11am)	**108** (11 Sept, 1pm)	**138** (16 Oct, 4pm)
2000 (8)	**3912** (16 Sept, 7pm)	**630** (1 Oct, 12pm)	**30** (5 Oct, 10 am)	**768** (2 Sept, 9am)
2001 (9)	**9888** (28 Sept, 7pm)	**528** (28 Sept, 5pm)	**96** (29 Sept, 4pm)	**168** (28 Sept, 12pm)

Fig.1 Peak hourly migration rates for Odonata from 1996 to 2001 at St.Joseph Peninsula, Florida, based on averaging multiple 5-minute counts per hour

in Cabbage palm (*Sabal palmetto*) and Needle palm (*Rhapidophyllum hystrix*). The roost area was a coastal scrub about 1-2 kilometers (one mile) north of my count location. Although many individuals were aroused by sunrise, some of the individuals did not start flying until 11am on this cool 10° C (50° F) morning.

The roosting posture was flat on the leaf at a height of 1 to 4 meters (3-13 feet). The individuals were solitary, with up to three on the same plant, and no apparent directional orientation, but with the leaves generally unshaded in the morning. The apparent preference for palm fronds perhaps provides a microclimate that retains heat, may provide some camouflage by disguising the outline of the body, or avoid predation (perhaps raccoon (*Procyon lotor*)). If avoiding predation was the strategy, then it was not entirely effective, as one Praying mantis (*Stagomantis carolina*) was observing munching on a roosting ***Anax junius***.

RISKS ALONG THE WAY. I had thought of *Anax junius* as "king of the air", and observed them preying on other dragonflies and Lepidoptera. However, I also observed ***Anax junius*** being preyed upon by ***Pantala flavescens***, another ***Anax junius***, and American Kestrel (*Falco sparverius*). Biologists Brian Millsap and Libby McConnell reported that attempts to trap both American Kestrels and Merlin (*Falco columbarius*) in nearby Franklin county were thwarted when the falcons would not approach bait birds due to the occurrence of abundant dragonflies. They report "some very spectacular chases all over the sky" mainly by merlins chasing the dragonflies. Additionally the biologists sometimes had more luck catching kestrels when dragonflies were caught in their mist nets.

Vehicles can also claim a large number of Odonata. On a 1.6-kilometer (one mile) stretch of Highway 98 on the mainland opposite the peninsula, I counted 218 dead or dying *Anax*. One semi-truck killed 6 flying individuals in a few seconds. Road kill counts could provide another measure of density particularly when Odonata are circling or there is no funneling barrier.

DESTINATION UNKNOWN. As yet, I'm unsure of the migration route after reaching the end of the peninsula. I have only seen about a dozen ***Anax*** landing on the mainland after apparently crossing the 2 kilometers (1.2 miles) of water separating the peninsula tip from the mainland.

Rich Rawson, an observant fisherman from St. Petersburg reports that when he is fishing 32-130 kilometers (20-80 miles) off shore at various parts of the Gulf of Mexico (Destin to Cape Romano) in mid-October, he sees a gold metallic dragonfly (***P. flavescens***?) flying from NW to SE. He suspected an Everglades destination. He has put up his anchor line at night, and has had "hundreds" land on it. Observations from boats and offshore oil platforms are tantalizing.

Michael May's observation at Crescent Beach, Florida (Russell, R. W., M. L. May, K. L. Soltesz, and J. W. Fitzpatrick. 1998. Massive swarm migrations of dragonflies (Odonata) in Eastern North America. American Midland Nat. 140:325-342) may suggest a Florida peninsula destination for many individuals. Perhaps radar may be a way to track destinations. A website is: (http://members.bellatlantic.net/~dbarber/migrant/RadarImdfly.html).

We have no real information about the origin of these dragonfly migrants. Stable carbon or heavy metal isotopes may be useful to determine source populations. First "reference" Odonates would be needed from their breeding grounds throughout the country. Then migrants could be captured and checked against background levels of various metals against the reference levels from the breeding ranges. The work requires a mass spectrometer but would generate more info than band returns (e.g. with birds, Chamberlain, C. P., J. D. Blum, R. T. Holmes, X. Feng, T. W. Sherry, and G. R. Graves. 1997. The use of isotopic tracers for identifying populations of migratory birds. Oecologia 109:132-141)

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

NOTES ON THE FEEDING OF THREE SPECIES OF ODONATES OF THE SUBORDER ZYGOPTERA IN CENTRAL CUBA

Jose M. Ramos Hernández, Apartado Postal 2004, Sancti-Spíritus, Cuba CP 60100

Translated by Nick Donnelly

The order Odonata constitutes a group of beautiful and gaudy insects known commonly as "libélulas". In Cuba there are some 80 species, in two suborders: Anisoptera, which are large and fast flying; and Zygoptera, which are small, with weaker flight. In Cuba there have never been studies on the feeding within the odonate fauna, except for a few observations on some species of Anisoptera (Hernández, 1928; Alayo, 1987). There have been no observations on the Zygoptera.

In the present work I furnish information on insects which form part of the diet of three species of damselflies of the family Coenagrionidae: ***Ischnura ramburi*** (Selys), ***Ischnura capreolus*** (Hagen), and ***Enallagma coecum*** (Hagen). This study was undertaken in a small impounded pond about 3 km north of the village of Cabaiguá, in a place known as "El Vivero", in the Municipio de Cabaiguán, Sancti-Spíritus province. This small pond has an area of about 30 m^2, with a depth of about 4 m, with a muddy bottom. The shores are covered by a 3 m wide fringe of a gress known as "Paraná" (*Panicum muticum* Forst.), along with some trees and bushes which provide some shade.

This study was undertaken during three months in 1999, and focused entirely on the grassy fringe of this pond. It was not possible to work with more than one species at a time; in July I studied ***Ischnura ramburi***, in August, ***Ischnura capreolus***, and in September ***Enallagma coecum***. I began my observations at about 7 AM by locating an individual which I followed a a prudent distance to avoid disturbing its activity. When it captured an insect I netted it and preserved the prey in 70% alcohol. Then I located another individual and repeated the observations. I undertook 5 observation days a month, with 6 hours each, for a total of 30 hours per species.

During these observations I noted that the three species caught their prey using two different hunting strategies: (1) ambush, with the damselfly perching on a stem (usually grass) waiting for the approach of a prey insect, which it would dash out at and seize, and then devour while perched again; and (2) active hunting, with the damselfly flying among the grass stems seeking prey, which it captured and then perched to devour.

It was shown that these two strategies were used by both sexes of the three species. Reference samples have been deposited in the collections of the author, and of the Institute of Ecology and Systematics of La Habana.

prey	***Ischnura ramburii***	***Ischnura capreolus***	***Enallagma coecum***
Diptera; Culicidae, gen & sp indet	X	X	X
Diptera; Sepsidae, gen & sp indet	X		
Diptera; Chloropoidae, gen & sp indet	X		
Diptera; Dolichopodidae, gen & sp indet	X	X	X
Diptera; Phoridae, gen & sp indet			X
Homoptera; Cicadellidae, *Draeculacephala minima*	X		
Homoptera; Cicadellidae, *Hortensia similis*	X	X	X
Homoptera, Delphacidae, *Peregrinus maidis*			X
Heteroptera, Gerridae, *Limnogenus franciscanus*	X		X
Heteroptera, Miridae, gen & sp indet	X		

Table 1. Prey species of three species of Zygoptera

Table 1 is a presentation of the results, showing the groups of prey insects for the three species of Zygoptera studied:

As can be seen in the table, Diptera were the major order represented in the prey with 55 per cent, followed by Homoptera with 27 per cent and Heteroptera with 18 per cent.

Finally, as additional data for this study, I include a list of Odonata observed and collected during the time of this study:

Zygoptera; Coenagrionidae: ***Enallagma coecum*** (Hagen), ***Ischnura capreolus*** (Hagen), ***I. hastata***

(Say), ***I. ramburi*** (Selys), ***Telebasis dominicana*** (Selys), ***Leptobasis vacillans*** Hagen

Anisoptera; Gomphidae: ***Aphylla caraiba***; Libellulidae: ***Crocothemis servilia*** (Drury), ***Dythemis sterilis*** Hagen, ***Erythrodiplax fervida*** (Erichson), ***E. justiniana*** (Selys), ***E. umbrata*** (L.), ***Erythemis plebeja*** (Burmeister), ***E. vesiculosa*** (Fabr.), ***E. simplicicollis*** (Say), ***Miathyria marcella*** (Selys), ***M. simplex*** (Rambur), ***Micrathyria aequalis*** (Hagen), ***M. dissocians*** Calvert, ***M. hageni*** Kirby, ***Orthemis*** sp cf ***ferruginea*** (Fabr.), ***Pantala flavescens*** (Fabr.), ***Perithemis domitia*** (Drury), ***Tauriphila australis*** (Hagen), ***Tholymis citrina*** Hagen.

Acknowledgements

I thank Marta Hidalgo-Gato for identification of hompoterans; Dely Rodríguez Velásquez for the identification of diptera, and Luis F. de Armas for the critical revision of the manuscript. They all are at the Instituto de Ecología y Sistemática of La Habana, Cuba.

References

Alayo, P., 1968a, Las Libélulas de Cuba (Insecta: Odonata), Parte 1., Torreia 2: 1-102

Alayo, P., 1968b, Las Libélulas de Cuba (Insecta: Odonata), Parte 2., Torreia 3: 1-54

Alayo, R., 1987, Agresividad de ***Lepthemis vesiculosa*** (Odonata: Libellulidae). Miscelanea Zoológica, No. 35: 1-4

Hernández, L. R., 1982, Dos casos interesantes de depredación por odonates del suborden Anisoptera, Miscelanea Zoológica, No. 13: 1-4

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

INTERSESTING ENCOUNTER BETWEEN *DROMOGOMPHUS* AND *SYMPETRUM*

e-mail from **Bryan Pfeiffer**

While butterflying at Ward Pound Ridge Preserve in Cross River, NY, on July 29, 2001, I noticed an interesting encounter between a female ***Dromogomphus spinosus*** (Black- shouldered Spinyleg) and a male ***Sympetrum*** species.

The ***Dromogomphus*** was resting on low vegetation in a wet field when the Sympetrum began dive-bombing and striking her thorax from above. The ***Dromogomphus*** had enough of this, launched and attacked the Sympetrum. They tangled, dropped into the vegetation out of my view for a second or two and then re-emerged. Only now, in her mandibles and/or legs, the ***Dromogomphus*** had the Sympetrum by the abdomen. I figured I'd watch her eat lunch. But the Sympetrum broke free, began dive-bombing her again and ended up in tandem with the ***Dromogomphus***. It appeared that his cerci and epiproct were attached at the proper spot on her head. The Sympetrum, apparently trying to lift her, bobbed in the air for about three or four seconds like a helium balloon attached to a battleship. I'm sorry to report that I was too dumbfounded to take a photograph. I also had no net with me.

Since it appeared that this relationship was going nowhere, he broke free and settled in the vegetation nearby. A male ***D. spinosus*** showed up and I lost track of the female and the ***Sympetrum***.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

MYTH OF THE FISHLESS POND

BOB HONIG

Recent books and articles have recommended that homeowners who want dragonflies keep their backyard ponds fish free, lest all the odonate larvae end up as fish lunch. Certainly, in what may be considered the traditional backyard pond, with a lot of open water and only scattered vegetation where insect larvae may find cover, fish may devour essentially all the larval odonates. Keeping this kind of pond fish-free to promote odonate success seems a sound approach.

But not all ponds are created equal. If there is sufficient cover (i.e., vegetation), dragonfly and damselfly larvae can successfully mature and emerge as adults. This is exactly what happens in nature, which certainly isn't fish-free -- so why not in back yard ponds as well? Perfect examples of this are two ponds (roughly 6x10 feet and 14x15 feet) that my wife and I installed in our yard: we have plenty of fish (*Gambusia* and Sailfin Mollies), in fact maybe a bit of an overpopulation; and we have plenty of dense vegetation so that the dragonfly and damselfly larvae can find refuge -- in fact the later, larger larval stages probably feed on the small fish. As a result, every year we have many dragonflies that visit the pond and whose larvae successfully mature to emerge as adults; and we don't have to use artificial means to control mosquitoes. (There are limits, I would imagine: if we introduced larger, more voracious fish, such as Bluegill or Koi, coexistence may become a thing of the past.)

In the roughly 5 years since our first pond was up and running, we have observed 21 species of Odonates. Each year since, adults of at least 3 species -- ***Anax junius, Erythemis simplicicollis***, and **Pachydiplax longipennis** -- emerge in abundance. Adults of ***Orthemis ferruginea,***

Tramea carolina, and one or more damselfly species also have successfully emerged. Males of ***Libellula needhami*** and ***Erythrodiplax umbrata*** have staked out territories in our back yard, but we haven't seen the females ovipositing. In the first few years, before the fish populations were booming, many ***Pantala flavescens*** emerged as well; but its preferred larval habitats are temporary waters, without vegetation -- a preference that would make it easy prey in waters with abundant fish (in fact we haven't seen this species ovipositing in our ponds during the past two years).

Entire species list:
******Anax junius*** (Green Darner), ******Erythemis simplicicollis*** (E. Pondhawk), ***Erythemis vesiculosa*** (Great Pondhawk), ***Erythrodiplax umbrata*** (Band-winged Dragonlet), ***Erythrodiplax minuscula*** (Little Blue Dragonlet), ******Libellula croceipennis*** (Neon Skimmer), ***Libellula incesta*** (Slaty Skimmer),
Libellula luctuosa (Widow Skimmer), ***Libellula lydia*** (Common Whitetail), * ***Libellula nedhami*** (Needham's Skimmer), ***Libellula vibrans*** (Great Blue Skimmer)
Miathyria marcella (Hyacinth Glider), *** ***Orthemis ferruginea*** (Roseate Skimmer), *** ***Pantala flavescens*** (Wandering Glider, formerly Globetrotter), ***Pantala hymenaea*** (Spot-winged Glider), *** ***Pachydiplax longipennis*** (Blue Dasher, formerly Blue Pirate), ** ***Sympetrum corruptum*** (Variegated Meadowhawk), *** ***Tramea carolina*** (Carolina Saddlebags, formerly Violet-masked Glider), ***Tramea onusta*** (Black Saddlebags), ***Ischnura hastata*** (Citrine Forktail), ***Ischnura posita*** (Fragile Forktail), ***Ischnura ramburii*** (Rambur's Forktail), ***Telebasis*** sp. (Firetail sp.)

*** = known to have successfully completed larval stage in and emerged from our ponds. Also we have found exuviae of unknown damselfly sp. or spp. but not yet identified them.
** = Observed ovipositing in our ponds.
* = Suspected to have oviposited -- males observed perched and defending territory for several summers.

=¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦=

EGRET PIGGING OUT ON DRAGONFLIES

Jane Walker and Joe Smentowski sent along a fascinating report (from Wild Bird Magazine, Jan-Feb 2002) of a great egret that developed a passion for dragonflies. At the Patuxtent Wildlife Refuge (Maryland) Bill Sefton reported watching an egret hunting dragonflies. "We watched through our spotting scope as the egret snapped them out of the air. After feasting on half a dozen, a particularly large dragonfly flew toward the egret and landed right on the top of its head. The dragonfly perched for a while, soaking up the sun, while the egret froze in its position. Tears of laughter filled our eyes. Eventually the dragonfly flew away unharmed, the addled egret resumed hunting, and we left with another priceless birding memory."

=¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦= =¦=

VERMONT ODE STUDY GROUP

Bryan Pfeiffer
Bryan@VermontBirdTours.com

The Vermont Ode Study Group, convening for its first meeting, discussed how to survive the winter without airborne dragonflies, and set in motion plans for the broader study of Odonata in Vermont.

Meeting at the North Branch Nature Center in Montpelier on November 4, 2001, all members shared similar goals: learning more about Odonata, preparing for the next field season, gathering data about dragonfly distribution in Vermont, and perhaps in the future initiating an atlas project. Our group owes much to Paul Michael Brunelle, whose visits to Vermont the past two years have energized interest in Odonata. Here's a summary of what we discussed at the meeting:

Data - We are now developing a shared database for keeping track of dragonfly sightings and voucher specimens. Moreover, study group member Mike Blust of Green Mountain College is planning a Vermont ode web site. Our goal is to have a data system together by next spring that could ultimately be used as part of a more comprehensive atlas project (which is certainly at least a few years away).

University of Vermont Specimens - At the invitation of Ross T. Bell, entomologist and noted Professor Emeritus of Zoology, our group has been asked to review and catalogue ode specimens at the University of Vermont. We will probably make our first trip to the collection in Burlington at our meeting in February or March. I will make a few advanced "scouting" trips before then.

Field Card - I've developed a draft Odonata checklist for Vermont for use in the field. Committee members will review it and make suggestions at the next meeting. If anyone would like a copy of the draft, I'd be happy to e-mail it as a Word97 document. I will finalize the checklist by next spring.

E-mail List - We've established an e-mail list (sort of a pseudo listserve) for communication about ode news and sightings.

ID Work - During our final hour, the discussion naturally turned to ***Sympetrum*** species

identification. We broke out the scopes and some of our ***Sympetrum*** specimens and spent quality time looking at hamules. We've tentatively decided to devote the next meeting to ***Aeshna*** species identification.

Next Meeting: We've set January 20 from 4-6pm for our next meeting, perhaps at the Vermont Institute of Natural Science in Woodstock.

Our small group welcomes insights from others who've had similar experiences building interest in Odonata. With at least a dozen members, I'm optimistic about the study group's future.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

THE TORONTO ENTOMOLOGISTS' ASSOCIATION

The Toronto Entomologists' Association (T.E.A.) is a non-profit association of amateur and professional entomologists, naturalists and conservationists who share a common interest in the insects of Ontario.

Primary aims of the association are to increase public awareness of the insects of Ontario through education, provide a forum for open meetings and lectures about insect lives, share common (or uncommon) experiences in a social atmosphere, and collect baseline data on the distribution and occurrence of insects in Ontario with particular emphasis on butterflies and moths.

MEETINGS AND FIELD TRIPS - The T.E.A. meets once a month from September through November, and January through April on Saturday afternoons to hear a guest speaker and to share observations. All meetings are open to the public.

During summer months, the T.E.A. conducts various field trips including Canada Day Butterfly counts for the North American Butterfly Association, surveys of particular habitats to assess the entomofauna, and visits to favourite places to refamiliarize ourselves with, and introduce visitors to, old friends.

PUBLICATIONS - The T.E.A. began publishing in 1970 with the publication of "A Checklist of Ontario Skippers and Butterflies and 1969 Seasonal Summary." Over 25 Occasional Papers have been published since then. One of the major benefits of membership in the T.E.A. is receiving these publications. At least one Occasional Paper is published each year.

In 1991, the T.E.A. introduced a major publication on the distribution of Ontario butterflies. The Ontario Butterfly Atlas documents the occurrence and distribution of Ontario butterflies with maps, timetables, habitat and hostplant descriptions and other information about each of the species known to occur in Ontario.

In 1995, the T.E.A. instituted a triannual newsjournal called Ontario Insects. The publication provides a forum for communications about the insect fauna of Ontario. It includes both scientific papers and entertaining articles of interest to entomophiles in Ontario as well as providing information on upcoming meetings and field trips, reports on past meetings, book reviews and notices, member's ads, artwork and much more. Ontario Insects is another benefit of membership.

In 1999, the T.E.A. introduced the annual Odonate summary, ONTARIO ODONATA, which follows the general pattern of the very successful seasonal summaries of lepidoptera. A specific objective of this publication is to develop a better understanding of the seasonal and geographic occurrence of damselflies and dragonflies in Ontario. It also contributes to monitoring of species, allow changes in overall and local distributions to be detected, and it assists with the protection of vulnerable, threatened and endangered species by providing the accurate information needed for status reports and recovery plans. Ontario Odonata is a forum for people to publish the results of dragonfly projects including regional lists, notable range extensions, and other observations.

The T.E.A. has also sponsored the reproduction of a number of out-of-print publications including the 3-volume set THE ODONATA OF CANADA & ALASKA BY WALKER & CORBET, THE CICINDELIDAE OF CANADA by J.B.Wallis (1961), THE NORTH AMERICAN DRAGONFLIES OF THE GENUS SOMATOCHLORA by E.M. Walker (1925) and THE NORTH AMERICAN DRAGONFLIES OF THE GENUS AESHNA by E.M. Walker (1912). These publications are for sale by the T.E.A.

MEMBERSHIP - The T.E.A. has more than 150 members from all over the world. T.E.A. membership fees are $20 per year ($10 per year for students; $25 per year for families). For US addresses, payment is in $US. Please pay by cheque or money orders. If you have further questions, information and copies of its publications can be obtained from the Treasurer: Mr. Alan J. Hanks, 34 Seaton Drive, Aurora, Ontario. Canada L4G 2K1; phone (905) 727-6993. E-mail: a.hanks@aci.on.ca
Website: www.ontarioinsects.org

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

"INSECT EXPERTS FIND WINGED WONDERS ABOUND AT EASTERN N.M. WILDLIFE REFUGE"

Tania Soussan visited the Bitter Lake National Wildlife Refuge shortly after the DSA trip there this summer. Her story, in the Roswell Journal in late July, featured extensive interviews with Karen Gaines, a graduate student at the University of New Mexico, and Gordon Warrick, the Refuge Superintendent.

Gaines has worked extensively at the refuge on her dissertation, and "rattles off scientific names like multiplication tables and identifies the cast-off larval casings of each species with a quick glance." "They're just amazing creatures," Gaines says. "They're cool, and they're fierce."

Soussan notes that the Mimbres people of this region regarded dragonflies as symbols of life. The Zuni have a legend in which a magical dragonfly made of corn and straw became a messenger to the gods.

Warrick mentions that the Refuge has about 90 species of odonates, which makes it one of the most diverse sites in North America, if not the world. Noting the excitement of the DSA group at finding ***Libellula comanche*** (for most of the group this was the first time), Gaines says, "It's almost a trash species here. You can find it anywhere. It just points out how cool the refuge is."

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

"FOUR-WINGED FRIENDS: DRAGONFLIES ARE EATING THEIR WAY THROUGH SOUTHWEST FLORIDA"

"It's a bird. It's a plane. It's a dragonfly?" So starts a story in the Naples Daily News on 25 October 2001. Reporter Tiffany Yates begins by focusing on the useful services of dragonflies: eating mosquitoes, fire ants, and termites. (It seems doubtful that the latter two are seriously controlled by dragonflies!). Sid Dunkle was interviewed for the article and stated that Florida has an abundance of species, with north and south Florida attracting somewhat different species. Bill Mauffray was also interviewed, stating that late afternoon is the time for peak numbers of dragonflies, especially green darners, which indulge in a feeding frenzy.

Yates goes on to mention the antiquity of dragonflies and marvels at their flight abilities. Pointing out the wide attention to dragonflies, she notes that Japan actually has a sanctuary for dragonflies (in Nakamura City).

Cutting to the chase, Yates launches into the heart of her story: the growing popularity of dragonflies as art and craft objects. She lists numerous shops in Naples that offer dragonfly motifs on furniture, glasses, candle holders, etc. Are dragonflies seizing the hearts and minds of the public through arts and crafts?

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

DRAGONFLY DRAMAS – A SHORT FEATURE ON DRAGONFLIES IN THE JANUARY, 2002 ISSUE OF SMITHSONIAN MAGAZINE

Roy Beckemeyer

The January, 2002 issue of Smithsonian contains a two-page article by Jake Page describing his visit to Bitter Lakes NWR in New Mexico, where he visited Karen Gaines and Robert Larson. Karen studies Odonata larvae in the refuge, and Robert has been studying adult odonates. Those DSA members who attended the New Mexico portion of the annual meeting post trips had a chance to meet Karen and Robert last July. The article is nicely done, and features a color photo of Karen ((unidentified in the caption) and Robert as well as pictures of ***Argia Alberta, Libellula saturata, Libellula subornata***, and ***Erythrodiplax berenice.***

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

CHICO CALIFORNIA NEWS

The Chico (California) Examiner seems to have discovered Odonata. Tim Manolis wrote an article in the BEC Environmental News Spring 2001 issue on the Odonata of Bidwell Park. This park boasts 45 species of Odonata – which is quite a list for a municipal park. Tim notes that Kennedy collected there in 1914, and that two of the species presently there were not seen by Kennedy: ***Enallagma civile*** and ***Libellula luctuosa***. This may be yet another instance of Odonata coming to artificial water bodies. Happily, all of the species Kennedy found are still there! Kathy Biggs contributed a general article to the same issue. Maybe this explains why California has become one of the hot states for dragonfly study.

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

DRAGONFLIES OF THE WORLD, by **Jill Silsby**. CSIRO Publishing, 216 p., available in the US from Smithsonian Institution Press, 750 Ninth St NW., Suite 4300, Washington DC 20560-0950

Reviewed by **Nick Donnelly**

This is perhaps our first "coffee table" book on dragonflies. It is a generously illustrated book that answers all sorts of questions that you never asked – but should have.

Jill Silsby has undertaken the truly daunting job of describing the World Odonata fauna – and she has done a very good job indeed. She starts with a description of odonate morphology and quickly follows with a general account of the life histories of typical odonates, generously illustrated by numerous photos of eggs and larvae.

A discussion of dragonfly flight by George Rueppell includes illustrations showing the independent activity of the front and hind wings – a subject that is only now just beginning to be appreciated by Odonatists. The late Peter Miller contributed a short chapter on color and mimicry, again with some excellent illustrations.

The dominant chapter of the book is the ninth, which comprises about half the book and is devoted to a comprehensive and generously illustrated account of the Odonata of the world, down to the level of subfamily. The classification given by the author is close to the conventional (Tillyard and Fraser) one, but it reminds us that our understanding of the relationships among various groups of Odonata is primitive and not completely satisfying.

I could find few quibbles or omissions of note in this encyclopedic coverage. Missing is the Central American genus ***Paraphlebia***, which is one of the very few New World megapodagrionids which sits with its wings folded over its back, and which also displays a fascinating male polymorphism. The assignment of the marvelous genus ***Epiophlebia*** to the suborder Anisozygoptera is contested by many, who claim that it is a true Anisopteran. The amazing species ***Neopetalia punctata*** has recently been put in a family of its own because of larval characters and the ovipositor of the female.

John Truemann's account of the fossil odonates (and other palaeopteran orders) is a brief but useful one. He manages, however, to note the huge size of the meganurids (one of the largest fossil insects of all) without noting the physiological problems that such a giant insect must have faced. The discussion is a little thin, and the reader will be forced to go elsewhere to find, for example, illustrations and discussion of such key genera as ***Heterophlebia***.

A short chapter on rearing seems out of place in a book otherwise lacking in "how to" passages. Norman Moore's final chapter on conservation is thoughtful and important.

The reader will find a few mistakes, mainly in figure captioning. Thus, on p. 76 (figures are not numbered) "***Caliphaea thailandica***" is a ***Coeliccia***, probably ***loogali***. The real ***Caliphaea thailandica*** appears on 91, where is has been labeled "***Megalestes kurahashii***"! On p. 83 ***Euphaea "guerini "*** is ***E. ochracea***.

The use of common names will do little to advance their adoption in the community. We are reminded in this book of the wide differences in British and American names. American "Meadowhawks" (***Sympetrum***) are British "Darters". One of the first pictures of the book is the "Slaty Chaser", which is the American ***Libellula incesta***. It is certainly not called a "Chaser" in its own country. The subfamily Brachydiplacinae is called the "Dwarves", which may puzzle the American reader who learned the plural of this word as "Dwarfs".

This highly attractive book is a tour de force displaying the wide experience and even wider travels of Jill Silsby. Few people could have attempted such a book, and we will all profit from its publication. It should be in the library of everyone interested in the Odonata.

=¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡= =¡=

DRAGONFLIES OF THE JAPANESE ARCHIPELAGO IN COLOR, by Masaya Okudaira, et al., 2001, Hokkaido University Press, xxxvi + 641 pp., of which 352 are color plates.

"Available at US$600.00 including air postage (export price). Prepayment should be made by bank check in US dollars drawn on a bank in USA payable to MARUZEN COMPANY LTD. If you prepay by bank transfer, please credit our Current Account No. 348894 with SANWA BANK, Nihonbashi Branch, 2-7-24 Nihonbashi, Chuo-ku Tokyo 103-0027, Japan. In this case, please pay additional US$25.00 for bank charge. We regret that we cannot accept any credit cards." For further information, contact Sachio Yamaya, Export Department, Maruzen Co., Ltd., 2-16-1 Nihonbashi Chuo-ku, Tokyo 103-0027 JAPAN
(tel) +81-3-3273-3234; (fax) +81-3-3278-9256; e-mail:sachio.yamaya@maruzen.co.jp

Reviewed by **Nick Donnelly**

This is the first comprehensive treatment of the Japanese Odonata fauna in English. The book is quarto size, and consists of equal parts color plates and text. There are 303 plates of adult Odonata, all in life size. These are excellent color photos, not scans, with many photos fitted on to each page. The eyes frequently have colors approximating those of the live insect. There are 7 additional plates showing larvae in color, again in life size, and additional plates of habitats, etc. Photos of Zygoptera adults, and especially larvae, are somewhat difficult to examine at this small size, but the photography and printing are superb. There are an additional 33 pages of black and white figures of

larval morphology; these are quite good and will be of special interest for their illustration of larvae of minor tropical families whose larval descriptions are scattered in the literature and often not very useful.

There is a pictorial key to families, both for adults and larvae. There are no further keys to genera, which will be a drawback for many users. The text treatment of each species and subspecies includes the original reference but no further literature citations, and no synonymy in the conventional sense. Both the adult and larvae are briefly described, but not in a diagnostic fashion. All genera have their wings shown, and all species have the male and female terminalia drawn in dorsal and lateral view. There are no illustrations of accessory genitalia, which would have been useful in the Gomphidae and Libellulidae.

Of special interest for many are the numerous illustrations showing color variations and subspecific color pattern variation. For example there are 66 color illustrations showing variation within ***Mnais p. pruinosa*** and 36 more of ***M. pruinosa costalis***. These show a wide range of regional, maturation, and other color variants. The text, however, does not diagnose the two subspecies nor discuss these color variation in any detail.

A book in English is obviously intended for the non-Japanese market, and Odonatists from around the world will find the book essential for an understanding of the Japanese fauna. The book would have been more useful if genera had been diagnosed. What, for example, are the diagnostic characters of ***Cercion***? Of ***Mortonagrion***? The ranges of the species will be mysterious to non-Japanese users. "Northern Honshu" is clear, but prefectures will have to be located in another book. And where is the "median tectonic line"? The Japanese common names are given, but corresponding Japanese characters are not shown, nor are the names translated or explained.

Many tropical species, because of accidental or stray occurrences in Japan (mainly in the southern Ryukyu Islands) are described. Those of us who work mainly in tropical Asia will be grateful for their inclusion. ***Rhyothemis phyllis*** and ***Agrionoptera insignis***, for example, are found on a single small Japanese island but merit 8 and 12, respectively, full color illustrations.

I suppose the only part of the book I found disappointing is the lack of any mention of Syoziro Asahina, who, at least for non-Japanese, has been the major figure in Japanese odonatology for the last half century and more, and who is the author of a fifth of the species-level names of Japanese Odonata.

It will be difficult for anyone interested in the Odonata of eastern and southeastern Asia to function without a copy of this lovely book.

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

CHILDREN'S BOOK NOTICES

(I regret having no further information)

The Dragonfly of Lookout Mountain
by Judy Hatch; $14.95
(Ages 9- 12) available on Amazon.com

MY LIFE AS A DRAGONFLY: SWIMMER TO FLYER by William S. Cruscial wsc@teleport.com
$3.00 (Please add $1.50 for shipping and handling) (preschool to 3rd grade), Sawtooth Press, 1345 Karen Way NW,Salem, OR 97304

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

JEAN BELLE, 1920 - 2001
Dr Jean Belle, died on the 21st of August, 2001. He was born on 24 December, 1920 in Soekaboemi, Indonesia and worked on Odonata to the very last day of his life. His last paper, titled "Commented Checklist of the Odonata of Surinam", is in press to appear in ODONATOLOGICA 31(1), on March 1,2002.
Belle is best known for his numerous papers on South American gomphids, as well as papers on other families.

PASTOR ALAYO D. 1916 – 2001
Adrian Trapero Quintana has sent along the sad news of the passing of don Pastor Alayo, whose book "Las Libé lulas de Cuba" is the essential reference for that island. Don Pastor had been in poor health for many years. We will miss him.

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

=|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|= =|=

TRAMEA

Nick Donnelly

Omar Bocanegra has updated his Texas site and added several good images.

http://www.uta.edu/biology/robinson/bocanegra/images.htm

The Iowa website has moved. Its new address is

http://www.iowaodes.com.

Antoine van der Heijden (<dragonflies@europe.com>) also recently updated his website, after a trip to southern France. There are loads of new pictures, including the endemic gomphid ***Gomphus graslinii*** and the exuviae of another endemic: ***Macromia splendens***. And, of course, loads of other southern European (sub)species, like ***Onychogomphus uncatus, O. f. forcipatus, O. f. unguiculatus, Anax parthenope, Oxygastra curtisii, Orthetrum albistylum, Cordulegaster bidentata, Sympetrum fonscolombii, Calopteryx haemorrhoidalis, C. splendens caprai, C. virgo meridionalis, C. xanthostoma, Platycnemis acutipennis, P. latipes*** and many new pictures of more northern species.

http://fly.to/dragonflies

F.K. Kakkassery has made a web site for Indian Odonata. One of its features is an absolutely ingenious "emergency" net that I am going to try the next time I have a chance.

http://www.geocities.com/indianodonata/

BACK ISSUES OF ARGIA AND THE BULLETIN OF AMERICAN ODONATOLOGY

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

Back Issues of the **BULLETIN OF AMERICA ODONATOLOGY** can be furnished at the prices given below. **Prices do not include postage; see below.**

1(1) The Odonata of New York, Thomas W. Donnelly p. 1-28 $3.00
1(2) Distribution of Dragonflies and Damselflies in Florida, Sidney W. Dunkle p. 29-50 $2.50
1(3) Morphological and ecological differences among species of *Ladona*, Michael L. May p. 51-56 $1.50
Comportamiento reproductivo y policromatismo en *Ischnura denticollis* Burmeister, Alejandro Córdoba Aguilar [with English summary] p. 57-64
1(4) A checklist of the Odonata of the Dominican Republic by Province, Jerrell James Daigle p. 65-69 $1.50
Odonata de la Sierra de Huauchinango, Puebla, Mexico [with English summary] , José A. Gómez Anaya and Rodolfo Novelo Gutiérrez p. 71-73
2(1) La Nayade de Archilestes latialatus Donnelly, 1981 [with English summary] , R. Novelo-Gutiérrez p. 1-7 $1.50
Descripción e Historia Natural de las Larvas de Odonatos de Costa Rica. III *Gynacantha tibiata* (Karsch 1891) [with English summary], Alonso Ramírez p. 9-14
2(2) Description of the Nymph of *Epitheca* (*Tetragoneuria*) *spinosa* (Hagen, K. J. Tennessen p. 15-19 $1.50
The Larva and Adult Male of *Somatochlora georgiana* Walker, Jerrell J. Daigle p. 21-26
2(3) *Macromia illinoiensis* and *georgina*: a Study of heir Variation and Apparent Subspecific Relationship, T.W. Donnelly, K.J. Tennessen p. 27-61 $3.00
2(4) The Subgenus *Tetragoneuria (Anisoptera: Corduliidae: Epitheca)* in New Jersey, Michael L. May p. 63-74 $1.50
3(1) The Odonata of Ohio - a Preliminary Report, Robert C. Glotzhober p. 1-30 $3.00
3(2) Four Decades of Stability and Change in the Odonata Population at Ten Acre Pond in Central Pennsylvania, Clark N. Shiffer & Harold B. White p. 31-40 $1.50
Descripción e Historia Natural de las Larvas de Odonatos de Costa Rica. IV. *Mecistogaster ornata* (Rambur, 1842) [with English summary], Alonso Ramírez p. 43-47
3(3) The Distribution of Odonata in Alabama, Kenneth J. Tennessen, James D. Harper, R. Stephen Krotzer, p. 49-74 $3.00
3(4) Distribution Records of the Odonata of Montana, Kelly B. Miller and Daniel L. Gustafson, p. 75 - 88 $1.50
4(1) An Annotated List of the Odonata of New Jersey, With an Appendix on Nomenclature in the Genus *Gomphus,* Michael L. May & Frank L. Carle p. 1 - 35 $3.00
4(2) The Odonata of Patuxtent Wildlife Research Center and Vicinity, Richard L. Orr p. 37 - 67 $3.00
4(3) The Status of *Lestes apollinaris* Navás and *L. henshawi* Calvert, Thomas W. Donnelly p. 69-74 $1.50
4(4) The Dragonflies of Washington, Dennis R. Paulson p. 75-90 $1.50
5(1) The Dragonflies and Damselflies (Odonata) of Louisiana, Bill Mauffray p. 1-26 $3.00
5(2) The Odonata of the Cayman Islands: a Review, R.R. Askew, R. Prosser, and P.S. Corbet p. 27-32 $1.50
Taxonomic and Population Studies of British Columbia *Aeshna* species, G. Peters p. 33-42
5(3) Adapting the Townes Malaise Trap for Collecting Live Odonata, Robert C. Glotzhober & Dan Riggs, p. 43-48 $1.50
Archilestes grandis (Great Spreadwing) in Central New Jersey, with Notes on Water Quality, David P. Moskowitz and David M. Bell, p. 49-54
Variation in Head Spines in Female *Ophiogomphus*, with a Possible Example of Reproductive Character Displacement (Anisoptera: Gomphidae), Dennis R. Paulson, p. 55-58
5(4) The Odonata fauna of Connecticut, David L. Wagner and Michael C. Thomas, p. 59-85 $3.00
6(1) The Distribution of the odonata of Hawaii, Jerrell J. Daigle, p. 1-5 *
Additions to the Description of *Gomnphomacromia nodisticta* Ris 1928 (Odonata: Corduliidae), N. von Ellenrieder, p. 7-11
6(2) The Odonata of Iowa, Robert W. Cruden and O.J. Gode, Jr., p. 13-48 *

* subscription

Mailing and Handling Costs:

	SURFACE		AIR MAIL	
	1st number	each additional	1st number	each additional
United States	$1.25	$1.00	---	---
Canada, Mexico	$1.25	$1.00	$1.50	$1.25
Western Hemisphere	$1.50	$1.25	$2.00	$1.50
Europe, Asia, etc	$1.50	$1.25	$3.00	$2.50

ARGIA

Binghamton, New York **Vol. 13, No. 4, 5 Jan. 2002**