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# ARGIA

THE NEWS JOURNAL OF THE DRAGONFLY SOCIETY OF AMERICA

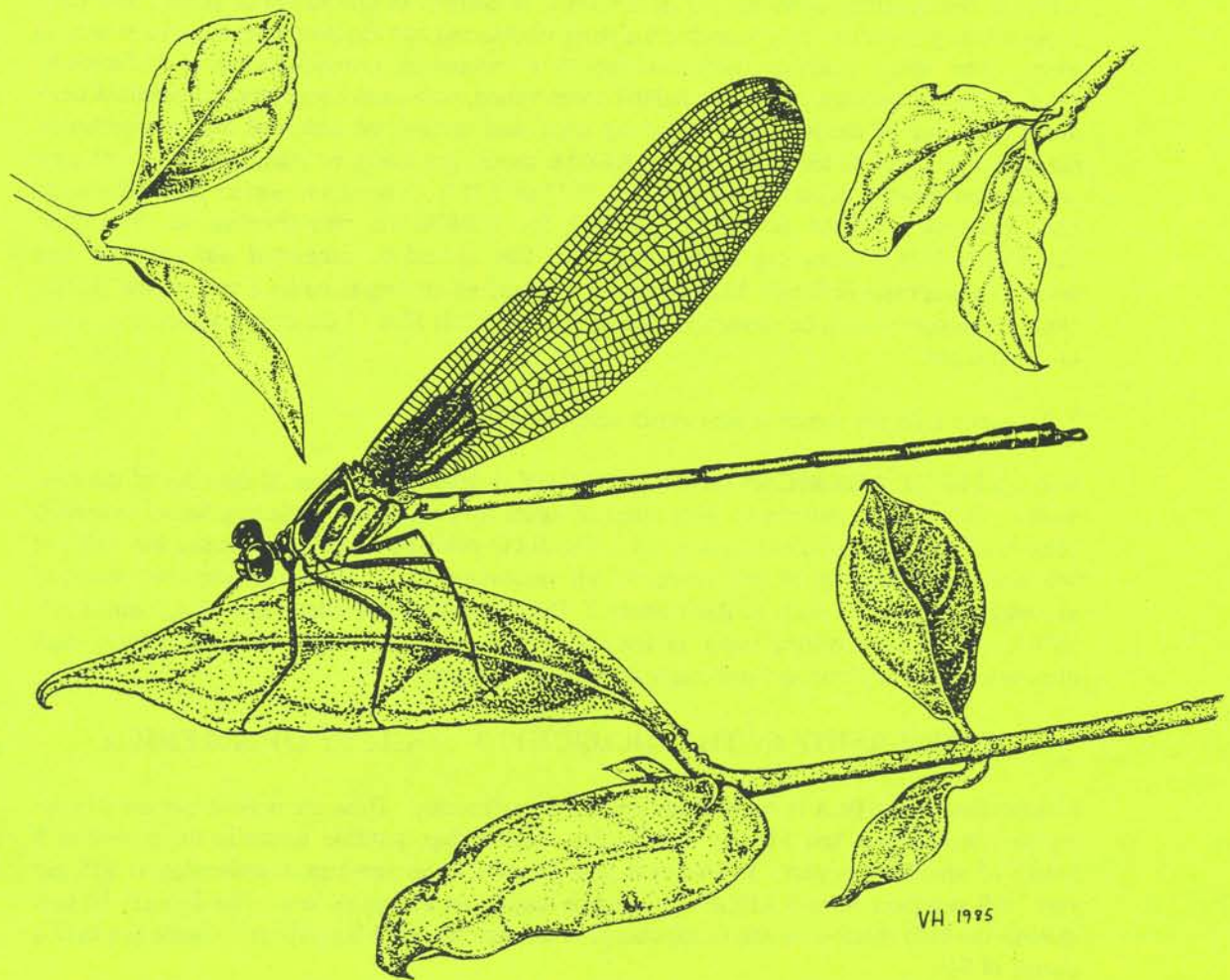
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# THE DRAGONFLY SOCIETY OF AMERICA

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

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

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

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Cover: *Hetaerina capitalis* Selys, drawn by Victor Hellebuyck, Quebec

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

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## IN THIS ISSUE

This is an end-of-the-season issue, full of notes and memories of a once warm and delightful summer. I am currently burrowing in my "computer room" waiting for next summer, just as all the larvae in the local ponds and rivers are burrowing in the sand or muck, also waiting for their all too brief moment in the sun.

Now is the time to make plans to attend one all of the field gatherings in 1994. The national meeting (North Carolina) and Northeastern meetings (New York) continue well established traditions. Next year we plan the 1st Southeastern regional meeting, which will be in early April in southern Alabama.

One of the main features of this issue is an article by Ginger Carpenter about the status of the elusive northeastern US cordulid, *Williamsonia lintneri*. Many of us would agree that it is probably the northeastern species facing the bleakest prospects, both because its ponds all seem to be located within the expanding eastern megapolis and because many of its ponds might be disappearing because of normal plant succession!

Sid Dunkle checks in with two articles. One details a trip to Belize with Bill Mauffray and one a trip to Thailand with the Westfalls.

Alonzo Ramírez reports on his activities studying Costa Rican larvae, which are impressive. Richard Orr wonders if two *Celithemis* could be the same species. I find some minor structural differences but I am unable to answer his query. Any comments?

Bob Gltzhober raises the issue of plastic specimen boxes, which might be attacked by pesticides. He also asks for guidance in the usage of scientific names of Odonata. This last is probably easier to deal with than common names, which are contentious.

Victor Hellebuyck - who has supplied several of our more attractive covers - takes a break from his

art work to report on some species in eastern Quebec.

## TENTATIVE PLANS FOR 1994 DSA FIELD MEETING

The national meeting will be held at Sparta, North Carolina on the weekend of 4-5 June 1994. The attraction of this area is the New River, Virginia, and tributaries, and the upstream portions of some choice North Carolina rivers, such as the Catawba. Gomphids will be the focus (surprise!), but *Macromia margarita* dwells in this area. Tim Vogt and Jerrell Daigle are the organizers. Tim tells me that there is a superb and not-too-expensive motel at Sparta, but he warns me that we will have to book well in advance, because this area is a magnet for tourists during North Carolina's rhododendron season. He advises people who are interested to contact Jerrell Daigle (home telephone 904-878-8787), who has agreed to make arrangements. **Remember - phone now and plan to book early!**

## DSA SOUTHEASTERN REGIONAL MEETING TO BE HELD IN ALABAMA, APRIL 1994

Ken Tennessen

The first Southeastern Regional Meeting of DSA will be held in southern Alabama 15-18 April, 1994. The main targets of investigation are an *Ophiogomphus* species and a *Cordulegaster* species, although other interesting early season species can also be seen.

Last spring, we collected several small *Ophiogomphus* nymphs in two small gravel streams in southwest Alabama (Clarke Co and Monroe Co) and cannot positively identify them. They appear to be *incurvatus* or a species close to it; they are not *O. australis* Carle. The area in which we found them is only about 40 or 50 miles north of the Florida state line. We have had difficulty trying to find adult *Ophiogomphus* in



which have simply been urbanized. However, potential threats exist from a number of sources. Natural succession will eventually steal away the required habitat, as bogs and fens fill in and become shrubby. Development, whether residential or industrial, fragments the woodlands surrounding breeding sites and increases nutrient loads, thereby hastening the succession of *Sphagnum* bog/fen to less hospitable shrub bog. Furthermore, several extant populations occur in marginal sites, in very small numbers, or on tiny wetlands which would be very difficult to protect.

*Williamsonia lintneri*, is a small, subtly beautiful dragonfly, with dark brown background color, and lovely yellow to orange bands on the abdomen. Its habits, habitat, and emergence schedule make it difficult to mistake for any other species with the possible exception of the *Leucorrhinias*. *Williamsonia lintneri* is often the first species on the wing, emerging from cold bogs and fens very early in the season. Emergence varies from the northern parts of the range to the southern, but our earliest population in Rhode Island begins to fly by the third week of April. Most other populations are out and active by early or mid-May. Very shortly after emergence, adults are fully colored and ready to go. They fly into surrounding wooded uplands, where they may become exceedingly difficult to locate. We were lucky to be able to observe the frequency of emergence that occurred at the Rhode Island site that one day, due largely to the presence of someone on site every day.

The species is a sluggish flier, which habitually perches on sunny tree-trunks, paths, roads, or fallen snags, people's clothing or entomologist's nets. We had our best success locating adults in woodlands by walking slowly along sunlit paths, holding the bag ends of our nets down. Adults would regularly alight on the light-colored net bag.

Until recently, I thought I had a reasonable grasp of what the habitat for the Banded Bog Skimmer should look like. Most habitat descriptions for this species go something like this: cold, acid *Sphagnum* bogs/fens with surrounding Atlantic White Cedar in the south or Black Spruce in the north. Larvae are known to inhabit pools of open water overlying the *Sphagnum* mat. Beyond this, the subtle characteristics of the preferred habitat are less well known. For example, the bog or fen is usually (but not always) open, with little or no shrub encroachment; it is often (but not always)

thickly populated with rushes or sedges; frequently (but not all the time), *Sphagnum* is the dominant aquatic plant; and quite often (again, not all the time!), but less often than I had previously thought, Atlantic White Cedar (*Chamaecyparis thyoides*) is associated with the breeding site!

Newly discovered sites in Rhode Island diverge from the norm and pose more questions about how much we know about *Williamsonia lintneri* than most I have seen. Not one of these four sites contains *Chamaecyparis*; a few are tiny, secluded ponds rich in *Sphagnum* but lacking sedges or grasses (the *Sphagnum* soup habitat); others are ponds with mature hardwood trees growing on hummocks and scant growth of emergent vegetation (the swampy *Sphagnum* soup habitat); still others are solid-bottomed, dryish, and shrubby with little *Sphagnum* and no open water. Sites which tend towards the latter description are marginal, and unless confirmed, may not support breeding populations (adults are known to wander some distance).

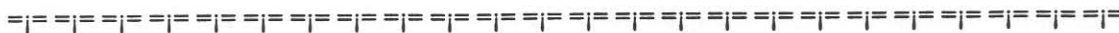
In Rhode Island, the majority of existing sites for *Williamsonia lintneri* are located close enough to one another (within 1 or 1 1/2 miles) to facilitate dispersal. I believe that somewhere in the southern part of the state there is a reservoir population from which adults are dispersing, and that protecting the tiny isolated fens and bogs lost in our woodlands is critical to the long-term survival of the species. Should a population on one site 'wink out' as a result of succession or development, the potential for colonization of other suitable habitats from the reservoir population still exists. And, given the ability of the species to fly distances, it is possible that dispersal to new sites may have occurred prior to the loss of the original habitat. Such great clusters of potential habitats represent the ideal situation for a species like *Williamsonia lintneri*. But what happens in a site where there is no appropriate habitat within dispersal distance? Isolated populations of *Williamsonia lintneri* do exist, in places where it is unlikely that potential habitat is present nearby. These sites should be protected and managed for long-term survival of the species.

Because of the relative isolation of its habitats, early and brief flight period, and phantom-like behavior, some basic questions about *Williamsonia lintneri* remain unanswered. For example, how far do the adults travel and where do they go? Does

the species require one or two years as a larva? What is the common denominator in the variety of habitats known today (i.e. what does *Williamsonia lintneri* require for survival?) How can we best protect the health and integrity of the habitats upon which it depends? With respect to the first question, a few tiny (very tiny!) transmitters may provide some answers. The last question is a bit more complicated and potentially very costly. Many Banded Bog Skimmer sites are owned by conservation agencies (government and private), but others are vulnerable to development and

mismanagement. Full protection of the habitat may require more than just conservation ownership. It may require active habitat management.

It is hoped that within the next few years, *Williamsonia lintneri* will be listed by the US Fish and Wildlife Service as an Endangered Species. Prior to this, we should be looking closely at the above questions and identifying creative ways to find what are bound to be fascinating answers!



### BOUNCING THROUGH BELIZE

Sid Dunkle, Biology Dept., Collin Co. Comm. Coll.,  
Plano, Texas 75074

Jerrell Daigle, Bill Mauffray, and I rented a Ford Bronco in fairly good shape (for Belize) in Belize City, and collected along the roads in Central and Southern Belize from 29 May to 11 June 1993. While the Western Highway which runs from Belize City on the eastern coast to the Guatemalan border on the west is an excellent paved road, the other roads we took were pretty bad, hence the title "Bouncing through Belize." You may be familiar with Murphy's Law "Whatever can go wrong, will go wrong." The Belizean Corollary to Murphy's Law is that "Whatever on a car can rattle loose, will shake loose!" For examples 1) The accelerator stop shifted, causing the motor to race. This was fixed with a judicious tap with a rock, once we figured out the problem. 2) The accelerator cable came loose, causing loss of control of the motor's speed. This was fixed with a piece of wire. 3) The cover of the radiator overflow container came off, allowing dust to be sucked into the radiator. This was fixed with wire and duct tape. 4) The transmission line came loose. Fortunately we had the sense to turn off the motor before the automatic transmission burned up, and we could hitchhike only a mile to a garage, get some transmission fluid, hitchhike back, and put in enough fluid to drive back to the garage and get the line fixed. 5) The power steering reservoir leaked. We gave it its daily dose of transmission fluid to keep it mostly full. 6) The lock on the back door hatch broke. We unscrewed the inside cover and carried it separately, but had to pull hard on the locking rods whenever we had to open the hatch. 7) The front

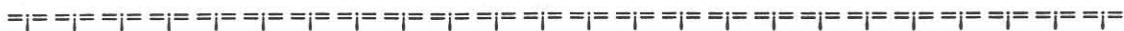
universal joint was loose. In Belize, where practically every adult male is an expert mechanic, we somehow got the world's most incompetent mechanic who never did get it fixed after an afternoon's messing around. 8) Blew a tire, causing more fiddling around until we finally bought a new tire. 9) Some roads were so rough the gasoline splashed out of the carburetor and the engine would quit. My method was to drive slowly over the bumps, the Mauffray Method was to skim over the bumps at 30 mph. The latter was faster, but tougher on the tires. Wire, duct tape, and tools -- in Belize, don't leave home without them! Belize, formerly British Honduras, is a small country divided into 6 districts, and very little odonatological work has been done there. However, Tineke Boomsma, who lives with her husband on the Shipstern Nature Reserve in northern Belize, is making a good start on surveying the country. She has even found a new species of *Telebasis*, which we did not see, in northern Belize. We enjoyed discussing odonates with Tineke on our last day in Belize. At the time we went to Belize I knew of 126 species of Odonata taken there, and we added 10 more. Tineke has probably found other species by now, especially since she collects mostly in the two northernmost districts. We collected in the 4 southernmost districts, and found many new district records. We all enjoyed tallying up our new records at the end of each day. Even Jerrell actually took time to catch a *Pantala flavescens* "for the record."

We timed our trip to coincide with the beginning of the wet season, and so it was, but collecting would have been better later I think because many temporary ponds and other habitats were still dry. We did find 9 species of gomphids, including the endemic *Epigomphus maya* in the Maya Mountains, but most Gomphidae were, as usual, scarce. Only *Phyllogomphoides duodentatus* and *Progomphus clendoni* were fairly common at some rivers. Aeshnids were even scarcer than gomphids. We took only a couple *Coryphaeschna viriditas* and three *Gynacantha helenga*. We saw a few *Anax concolor* but could not catch any. No Corduliids have been reported from Belize. A pasture pond surrounded by sedges was one of our best locations. Apparently without fish, it was buzzing with odonates. Here one could hardly swing a net without catching one or more *Micrathyrja debilis* or *Nehalennia minuta*. *M. debilis* is endemic to the Yucatan/Belize area, but we found it common in many places. *Lestes forficula* and *tenuatus* were also abundant at this pond, and a few *L. scalaris* [= *T. tikalus*] were present too. For a quick run-down on other Odonata, we found a few *Perissolestes magdalenae*, the first record of the family Perilestidae from Belize. These were usually hanging from a tip of a leaf in deep shade low over seepages with the wings closed. After being disturbed and flying to a new perch, they held the wings open. The only Pseudostigmatidae seen were a couple *Mecistogaster modesta*. The blue *Protoneura cupida* was commoner, on spring-fed streams, than I have seen any *Protoneura*. We did not capture any of the rare *Argia calida*, but we found 10 other species of *Argia*, including the beautiful black and blue *A. ulmeca* which was numerous on some streams. While driving with all our baggage packed in the car in a construction zone, we saw a slender dark dragonfly flying over a roadside mudhole. Getting out with net pieces, because the rest of the net parts were under the suitcases, we caught a few of the odonates flying at this unlikely place. We never did get the dragonfly, and I still do not know what it was, but we found a few *Enacantha caribbea*. This was the only place on the trip where we saw this species! We stopped on our way back a week later, but the pool had been obliterated by construction. The red-abdomened *Orthemis levis* was more common in southern Belize than I have ever seen it before. On our drive down the Southern Highway, we observed amazingly sharp ecological and cultural

changes. In some places the road passes through Pine Savannas which form islands in the seasonal tropical forest. We saw a couple of habitats so unique, slough/swamp/marsh combinations, that apparently no odonates were adapted to live in them. From Golden Stream south, the rivers suddenly became clear and spring-fed with limestone bottoms, the forest became more rain-forest-like, and the people were primarily Mayans. I noted that the Mayans seemed to create larger forest clearcuts than we saw elsewhere. Many of the Mayan women go topless as they do their laundry in the rivers. Jerrell was right in amongst them, swinging. Another interesting dimension to our collecting in southern Belize occurred when we collected at a British jungle warfare training camp. The Rio Aguacate there was nice, but at the bridge it was full of soldiers cooling off. The troops were friendly, but I was a little nervous about soldiers marching all through the area with automatic rifles. Guatemala, adjacent to Belize, still claims Belizean territory for its own. The president of Guatemala resigned when we were in Belize, creating an unstable political situation, so British troops had stepped up their maneuvers. I guess Belize, like Costa Rica, does not have an army of its own. Although Belize is famous for its Jaguars, we did not see any, although one of the places we collected was the Cockscomb Basin Jaguar Sanctuary. However, Bill saw two Jaguarundis, otter-like cats, one of which he says ran right across the road in front of me when I was driving! Apparently I was concentrating so hard on the potholes and rocks I was about to hit that I never saw the cat. Bummer! We all did see a Tayra, a large black weasel, that also ran across the road one day. I was disappointed that we saw so few fruit-eating birds such as toucans and parrots, and only a few Morphos and Owl Butterflies. This was probably because the rainy season was only just getting started. I did get to see several Bare-Throated Tiger-Herons, and my first of the rare, forest-dwelling Chestnut-Bellied Herons. We saw two live snakes, which I could identify because I found a nice little booklet on the snakes of Belize in a bookshop. One was the large black and yellow Spotted Rat Snake *Spilotes pullatus*, also called the Thunder-and-Lightning Snake. The other was the Speckled Racer *Drymobius margaritiferus*, olive green speckled with yellow dots. The book lists 54 species of snakes known from Belize, of which 9 are poisonous. Belize is developing fast. There were few places to stay when I was there in 1986, and I expected that we would need mosquito

nets, which we took along. However, we were able to stay in hotels with screened windows every night, nearly always also air-conditioned. Food in restaurants was quite good, especially the fried chicken and the jewfish. Bill ate some fried shrimp which we think were slightly tainted, and as a result missed a day of collecting. Although we could probably have drunk tap water outside of Belize City, we drank bottled water just to be safe. We found out after we got to Belize that permits are needed to collect insects or any other life form anywhere in Belize, and separate permits are needed to export them. The officials concerned speeded up the process for us so that we could get permits while we were in Belize, but we still lost a

day of collecting time while obtaining them. The permits allow collecting in the reserves you specify when applying for the permit. Belize is trying to do things right -- to preserve the biodiversity of the country before it is irrevocably damaged by development. According to literature we acquired, an impressive 35% of the land in Belize is protected in some way. Belize, with its coral reefs, Mayan ruins, forest reserves, and wildlife, will someday rival or exceed Costa Rica as a tourist destination in Latin America. And for North Americans, a definite plus is that English, and good English at that, is the national language of Belize.



### A TEXAN IN THAILAND

Sidney W. Dunkle, Biology Dept., Collin County Community College, Plano, Texas, USA 75074

Brother Amnuay Pinratana, in a weak moment, invited both me and Minter Westfall to stop in Thailand and collect Odonata before attending the International Dragonfly Symposium in Japan in 1993. Naturally, both Minter, accompanied by his wife Margaret and daughter Holly, and I jumped at this chance and descended on Brother Amnuay in July of 1993. We actually collected from 22 - 27 July. Since none of us spoke any Thai, Brother Amnuay did everything for us, from getting us the best food at the cheapest price to arranging our transportation. We could have done practically nothing without Brother Amnuay's help, and that of his numerous friends and colleagues. Brother Amnuay and friends, Thank You!!

While in Bangkok, Brother Amnuay took us sightseeing to various magnificent temples, big hotels, and the like. We travelled by nearly every means known to man, including busses, ferry boats, regular taxis, and open-air three-wheeled motor scooters known as "tuk-tuks." The last was the best way to really experience the heavy Bangkok traffic, since we sat at nose level with the tailpipes of diesel-spewing busses.

We also ate practically every food known to man. On one memorable occasion we ordered "frogs", thinking that this was frog legs. Not so! We got little skinned and fried corpses with all their legs

sticking up! We also ordered "rice birds." This also was exactly what we got, little sparrows of some sort blackened to a crisp. One just crunched them up, beak, skull, and all. Very tasty, at least to Minter!

Since we actually only collected at 5 localities, and typically stayed in one area most of the day, I can give details about each of the places we visited. At all localities, Brother Amnuay, Minter and Holly got species which I did not, so the lists below can be increased by at least a few species. For the benefit of readers from both Hemispheres, I draw comparisons between some Asiatic and American species.

The first locality, and the only still-water habitats we visited, were the ponds and ditches on the Kasetsart University Campus. Although this was right in Bangkok, it was an hour and a half drive through heavy traffic from where we were staying. We had less than two hours to collect, but I found 8 species of odonates, all but 2 of them Libellulidae. The non-libellulids were *Ischnura senegalensis* and the spectacular yellow and black *Ictinogomphus decoratus melaenops* (sadly, I could only catch one of the latter), while the libellulids included *Brachydiplax chalybea* which looks like a chunky *Pachydiplax*, *Brachythemis contaminata* which looks and acts like *Perithemis*, the brown-winged *Neurothemis fluctuans*,



*Orthemis sabina* which looks and behaves much like a slender *Erythemis simplicicollis*, and the bright red *Urothemis signata*. I had trouble identifying one small libellulid which looked like *Erythrodiplax connata*. It turned out to be *Aethriamanta aethra*.

From Bangkok we took an overnight train 900 km to the city of Hat Yai, far south in the Malayan Peninsula. Accompanying us was Somnuk Panpichit, an Auto Mechanic who collects for Brother Amnuay. Somnuk spoke no English at all, but he spoke the universal language of dragonfly collectors by giving us several choice specimens! From Hat Yai we drove out to collect for the next five days near waterfalls in forest reserves in the mountains known as the Khao Ban Tat. One of Brother Amnuay's friends was the Chief of these forest reserves, so we had red-carpet treatment! Hail to the Chief!!

Our first site here was the Tone Nga Chang waterfall. When I waded into the clear rocky stream and looked around, sitting on rocks in the sun over there was *Rhinocypha fenestrella* with its iridescent wings, perching on rocks over there was *Euphaea ochracea* with its orange wings. This was fantastic because I had never seen either Chlorocyphidae or Euphaeidae in the wild before! Flying and hovering like a black *Brechmorhoga* was *Zygonyx iris*, and skimming over the water was *Neurobasis chinensis*. Male *Neurobasis* look like *Calopteryx aquabilis* but have the upper surface of the hindwings brilliant metallic green. They fly low over the water vibrating just the clear forewings while the hindwings are held horizontally and slanted rearward, producing the overall effect of a brightly colored delta-winged jet aircraft! Unfortunately, after half an hour the sun was obscured behind clouds and it was either cloudy or raining for the entire remainder of our collecting days!! I became adept at holding an umbrella in one hand and swinging a net with the other! However, we persevered on this day and saw some other odonates of note along the stream including the rare *Dysphaea dimidiata* which looks like the black-winged form of *Hetaerina titia*, and *Euphaea guerini* which looks like an all-black *Calopteryx*. I took only one gomphid in the remainder of the trip, a female *Merogomphus parvus* which, with long spines on its hind femora, resembles a miniature *Dromogomphus*. She produced the first pink odonate eggs I have seen. Up a mostly dry tributary was another ensemble of

species including *Rhinocypha biforata*, and two Protoneuridae, the black and orange *Prodasineura autumnalis*, and the black and blue *P. laidlawi*. These behaved more like Coenagrionidae than the protoneurids I am familiar with in tropical America. Platycnemididae were represented by two common species, the orange-legged *Copera marginipes* and the red-legged *C. vittata*, one specimen of *Coeliccia albicauda*, and several specimens of a black and blue *Coeliccia* I have not been able to match up with anything recorded from Thailand. There were a few of the bright red libellulids *Orthetrum testaceum* and *O. chrysis* which appeared essentially identical in the field. The red wing veins of *Neurothemis fulvia* made them look like red flowers growing on the ends of twigs. Here also I took the only aeshnid I saw on the whole trip, a male *Gynacantha subinterrupta*. Altogether, I found 26 species of odonates at this locale.

Our target the next day was the Tone Plew waterfall area, where I found 23 odonate species. New species here included *Vestalis amoena*, quite like *Calopteryx angustipennis*, and the large black and blue platycnemidid *Indocnemis orang* (one male). There wasn't much out along the gloomy stream below the waterfall, so we walked a short distance down the valley to a sand bottomed stream more in the open. On the way a damselfly flew in front of my face, and a self-defense type swing showed it to be the rare black and blue *Prodasineura collaris*. At the stream *Rhinocypha biforata* was common, along with a few *R. fenestrella* and one *R. perforata*. Also perching over the stream were a few *Libellago lineata* which is a tiny red jewel of a chlorocyphid, a couple of *Cratilla lineata*, that is a libellulid similar to *Libellula incesta* marked with yellow lines, and *Potamarcha congener* which looks like *Brachymesia herbida*. I caught a chunky female libellulid which laid blue eggs (!), the first such I have seen from any odonate, which I thought must be something rare and special. I was disappointed to find later that it was the common *Brachydiplax chalybea*. While I easily waded along this shallow open stream, tremendous blasts of wind mixed with rain blew along its course. The Chlorocyphids held on to their perches for dear life, but fortunately did not abandon their posts. I think most American species would have been in deep cover under these conditions! I did catch one birdwing butterfly grounded by the rain,

the only one I have ever seen, but its wings were torn so I released it.

Next stop was the Boripat Waterfall, where I found 17 species of odonates, several different than those seen elsewhere. On a side channel of the main stream *Vestalis amethystina* was common. I found one male each of the rare brown Amphipterygid *Devadatta argyiodes*, the beautiful green and gold Megapodagrionid *Rhinagrion mima*, and the rare *Euphaea impar* which resembles a blue *Cora* with black hindwing tips. There were also two rare Libellulids, *Lyriothemis biappendiculata*, like a small red *Planiplax*, and *Tyriobapta torrida* which looks like *Celithemis verna* with black hindwing bases. The *Lyriothemis* apparently breeds in forest pools and must really be rare, because it was the only thing I caught that Brother Amnuay wanted to keep (I managed to get one for each of us). The *Tyriobapta* were all at one shady pool among big boulders, where I saw two males do a face-to-face dance like that of some *Heteragrion* (Megapodagrionidae). While wading down the stream, it suddenly started raining hard at a place where the stream looked particularly promising. We returned the next day, and again it started

raining hard just as I got to that same exact point. I wonder what lives on that promising stretch! That time I also got two terrestrial leech bites, which I did not know about until the leeches detached and I continued bleeding profusely.

At our last locality, Panun Waterfall, I found 20 odonate species, most of which we had found elsewhere, but *Neurothemis tullia* and *Orthetrum glaucum* were new.

My impression of the Thai Rainforest was that, although it looked similar, there was less wildlife evident than in American rainforests, or perhaps it was the weather. Although Thailand is reputed to have 918 species of birds, I saw very few of them. Likewise I saw few lizards or butterflies. We heard Gibbons close by at Boripat Waterfall, but were not able to see them. Although I carried my heavy camera hopefully around with me, few photos were possible because of the dim light. The trip was of course still a resounding success because I found 50 species of Odonata, all but one of which, *Pantala flavescens*, I had never seen in the wild before. I hope to return to Thailand someday!

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## COSTA RICAN ODONATA LARVAE

Alonso Ramirez

In Costa Rica, as in the rest of the neotropical region, knowledge of Odonata larvae is very poor compared with adults. There are 300 species in the country, distributed in 14 families, and of those only 40% have had their larvae described. One family, Platystictidae, is without any described larvae.

With this in mind, I started a few years ago research into the Odonata larvae in Costa Rica, with the objective to describe new larvae, make keys and revisions for genus or families, another objective being to make up a collection of larvae and adults. This research will probably never finish.

After the first step, collecting and rearing as many larvae as possible, I have enough material to start descriptions of larvae. The first description ready

to be published was one of the most common megapodagrionid in the country, *Heteragrion erythrogastrum*; this beautiful, blood red damselfly, has a little robust larvae similar to *H. albifrons*, which is also present in Costa Rica, but was described from Mexico. The second description was that of *Archilestes neblina*, known only to Costa Rica and infrequently found, although I found many larvae in a pretty primary forest stream.

After a time collecting gomphids, six descriptions are ready, *Phyllogomphoides bifasciatus*, *Erpetogomphus tristani*, and *E. constrictor* (first record for Costa Rica), *Epigomphus subsimilis*, *E. subobtusus* and *E. echeverri*. A description of the larvae of *Gynacantha tibiata* will be published in BAO soon.

There is much material in my collection from other families, such as libellulids and coenagrionids, waiting to be identified. That will happen soon, when I finish the descriptions already started.

Special effort will be made with the Megapodagrionid family. Rodolfo Novelo was here last April with the firm purpose of collecting as many *Philogenia* larvae as possible. The idea is to work with this genus, with *Heteragrion* and with the Mexican *Paraphlebia*, and to complete the taxonomy of the family in this area. Similar work will be done with the Pseudostigmatidae.

It is obvious there is still much work to do in Costa Rica.

I hope to be able to make revisions of complete families in the near future. Or, why not, write a book on Costa Rican Odonata Larvae. But, for the moment I am going to collect and rear material to describe.

That's all with the "pipilachas" or "gallegos" (as we call Odonata) of Costa Rica. For now.

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**A NEW LOCALITY FOR *GOMPHAESCHNA FURCILLATA* (SAY) (ODONATA; AESHNIDAE) IN QUEBEC**

Victor Hellebuyck, 1277 Lincoln Street  
Sherbrooke, Quebec, Canada J1H 2H8

The Aeschnid dragonfly *Gomphaeschna furcillata* (Say) has been reported from the southern part of Quebec by Robert (1963) at Bertherville (Berthier), and more recently by Pilon and Lagace (1991) from Lanoraie d'Autray (Berthier). In the summer of 1991, while collecting insects in a sphagnum bog near Sherbrooke, I collected 10 males and a tandem pair: a total of 12 specimens of *G. furcillata* (Say). The collecting site is in accordance with the description of the habitat described by Pilon and Lagace (1991). One female was trying to oviposit in a small water hole in the boggy area. A small stream ran off the bog, entering the forest; the tandem pair was collected in this area. The number of specimens collected, the tandem pair, and the female trying to oviposit indicate that this species is well established in this bog. This unique area near a fast growing city is in danger of being destroyed by developers. A golf camp already exists near the site.

References:

Pilon, J-G., Lagace, D. (1991). Capture de *Gomphaeschna furcillata* (Say) (Odonata:

Aeschnidae) dans la tourbiere de Lanoraie (Berthier). Fabreies, 16 (4), 91-93.

Robert, A. (1963). Les libellules du Quebec. Service de la faune du Quebec, Bulletin 1, 223 pp.

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**CONFIRMATION OF *ENALLAGMA CIVILE* (HAGEN) (ODONATA; ZYGOPTERA) IN SOUTHERN QUEBEC**

Victor Bellebuyck, 1277 Lincoln Street  
Sherbrooke, Quebec, Canada J1H 2H8

*Enallagma civile* appears in Fyles' list of the Dragonflies of the province of Quebec (1900). He does not, however, give a specific locality for this species, only stating that "many of these species are reported to have been taken on the Yamaska River". Whether he collected this species on the Yamaska River or not, we do not know. Williamson (1907) mentions *E. civile* for Canada without giving localities and by referring to Fyles' list. Because of the uncertainty of Fyles' record, I believe subsequent authors (Walker, 1934; Robert, 1953; Hutchinson et al., 1977; Savard, 1990) have hesitated in including *E. civile* in their Quebec lists.

*Enallagma civile* is a common widespread species that ranges from Canada to Central and South America and the West Indies (Paulson, 1982). Walker (1953) states that "this species has apparently entered Canada by two or three routes: (a) from the New England States to the Maritime Provinces, where it is by no means uncommon...." It has also been reported from Prince Edward Island (Hilton, 1990), from Nova Scotia, from New Brunswick and other provinces of Canada (Walker, 1953). Being so common it is not surprising to find it in the Province of Quebec.

In July 1983 I collected dragonflies on the shore of Lake Massawippi, near the town of Ayer's Cliff in Quebec, located near the American border (45° 12'N, 72° 02'W). Five males and two females of *E. civile* were collected and five of them were in the teneral stage, indicating that emergence was taking place or had taken place the day before. The specimens were flying close to the shore over a patch of aquatic vegetation where they hung on the emerging leaves. In association with *E. civile* were *Nehalennia irene* (Hagen) and *Enallagma*

*carunculatum* Morse, *E. hageni* (Walsh), *Ichnura posita* (Hagen) and *I. verticalis* (Say).

References

Hilton, D.F.J. (1990). The Odonata of the Province of Prince Edward Island, Canada. Notul. Odonatol., 3 (5), 65-80.  
 Hutchinson, R. & Larochelle, A. (1977). Catalogue des libellules du Quebec. Cordulia Suppl. 3, 45 p.  
 Paulson, D.R. (1982). Odonata. In S.H. Hulbert & A. Villalobos-Figueroa, Aquatic biota of Mexico, Central America and the West Indies (pp. 249-277). San Diego State University.  
 Robert, A. (1963). Les Libellules du Quebec. Quebec: Service de la faune, Ministere du tourisme, de la chasse et de la peche, Bulletin no. 1, 223 p.  
 Savard, M. (1990) Liste annotee des especes d'odonates. Entomofaune du Quebec, Document provisoire, no. 6, 12 p.  
 Walker, E.M. (1934). A preliminary list of the insects of the province of Quebec, Part IV: The Odonata. 26th Rept. Soc. Prot. Plants Quebec (1934-1935), 96-105.  
 Walker, E.M. (1953). The Odonata of Canada and Alaska, Vol. I, University of Toronto Press, 292 p.  
 Williamson, E.B. (1907). List of dragonflies of Canada. The Ohio Naturalist, 7 (7), 148-150.

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**PENNSYLVANIA COLLECTING NOTES**

Clark Shiffer

As some of you know, I terminated my employment with the Pennsylvania Fish and Boat Commission on June 18, 1993, under an early retirement option. Less than two weeks out of the office I embarked upon some field surveys for Odonata and Lepidoptera under a contract with The Nature Conservancy. Targeted habitats are located in Lycoming and Sullivan Counties, and the species targeted are considered to be of special concern status in Pennsylvania.

As a result of these surveys, the following new county records were obtained in 1993 for species of special concern:

*Aeshna mutata* - Hidden Lake at Crystal Lake Camp (a small glacial pond straddling the Sullivan and Lycoming Co line), 5 miles SSE of Hills Grove, Sullivan Co, 13 July.

*Anax longipes* - same locality as for *A. mutata*; also 13 July.

*Somatochlora forcipata* - Cranberry Bog 0.3 miles E of Route 44 and 7.5 miles WSW Cedar Run, Lycoming Co, 8 July.

*Somatochlora incurvata* - same locality and date as for *S. forcipata*.

*Dorocordulia lepida* - Hidden Lake at Crystal Lake Camp, Sullivan/Lycoming Cos, 13 July.

New county records were also obtained for the following species of special concern, but the field surveys were not part of the Nature Conservancy contract:

*Tachopteryx thoreyi* - small spring-fed tributary of Penns Creek, 2 miles WSW Weikert, Union Co, 12 July, 20 July.

*Arigomphus furcifer* - Mud Pond and along State Game Lands No. 12 road near Carbon Run Bog - 2.8 miles SE LeRoy, Bradford Co, 27 June and 21 July.

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**OBSERVATIONS ON SOMATOCHLORA INCURVATA IN PENNSYLVANIA**

Clark Shiffer

*Somatochlora incurvata* is now known from somewhat different habitats in four counties. Counties and localities are as follows:

**Bradford Co** (McCraney Run Bog - 2 miles SE LeRoy, and Carbon Run Bog - 2.8 miles SE LeRoy)

**Clinton Co** (Tamarack Bog, Tamarack)

**Lycoming Co** (Cranberry Bog 0.3 miles E of Route 44 and 7.5 miles WSW Cedar Run)

**Tioga Co** (State Game Lands No. 268 - 3.7 miles NW Morris)

One constant feature of all four sites is the presence of sphagnum pools. The water in these pools is clear and cold and part of a larger "pool" of water moving almost imperceptibly through the sphagnum mat. While all sites have open areas with grasses and sedges growing from the

sphagnum, they also have extensive growths of higher, compact vegetation. At the McCraney Run site the higher, thick growth is most *Spiraea latifolia*, interspersed with highbush blueberry, *Vaccinium corymbosum*. At the Carbon Run and Tamarack sites, the thickly-growing shrubs are leatherleaf, *Chamaedaphne calyculata*. Thick stands of common cattail, *Typha latifolia*, contrast with the grass-sedge areas at the Tioga Co site, while at the cranberry bog in Lycoming Co thick stands of cinnamon fern, *Osmunda cinnamomea*, are dominant. Female *S. incurvata* oviposit singly in all sizes of sphagnum pools located in the grass-sedge areas, as well as those located in the largely-shaded spaces beneath the higher, compact growth. Both sexes are more conspicuous in the grass-sedge areas, as the males fly randomly within several feet of the low growth, or hover for varying periods over the larger pools. Females seem to prefer to oviposit in the pools beneath the higher, thicker vegetations, where they are less conspicuous to males and potential predators. They also seem to be more active in this regard when the sun is obscured for lengthy periods, since the males commonly perch until the sun reappears.

The known Pennsylvania flight period for *S. incurvata* is June 27 to September 12. These dates represent specimens taken at the Carbon Run Bog. The earliest previous date of record is June 29 at the Tamarack Bog, and the latest previous date is September 5 at the Carbon Run Bog. With respect to latitude, Tamarack is the most southerly known site for *S. incurvata* in Pennsylvania, with the Lycoming Co site, the Tioga Co site, McCraney Run Bog and Carbon Run Bog progressively more northern.

General specimens, all females, have been taken on June 27 and 29, and July 5, 15, and 21. Pairs in cop have been seen, taken and/or photographed on July 18, August 2 and 12, and September 5. Oviposition has been observed between July 8 and September 4, with most observations in August.

Other *Somatochlora* species known to occur with *S. incurvata* at each site are:

Bradford Co. - McCraney Run Bog: *S. elongata*, *forcipata*, *tenebrosa*, and *walshii*. Carbon Run Bog: *S. forcipata*, *tenebrosa*, and *walshii*.  
Clinton Co. - Tamarack Bog: *S. elongata*, *forcipata*, and *walshii*.

Lycoming Co. - Cranberry Bog: *S. forcipata*.  
Tioga Co. - State Game Lands: *S. elongata*, *tenebrosa*, and *walshii*.

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#### DRAGONFLY SWARM ATTACKS CHINESE SHIP

(News report submitted to ARGIA by Ann Fraser)

Beijing, Sept. 21, 1993 (Reuters) - A Chinese oil tanker sailing through the Yellow Sea was attacked by a swarm of millions of dragonflies which covered the ship and scared one crewman so much he jumped overboard, an official newspaper said. Several days after Shanghai Maritime Bureau tanker 1002 set sail from the northern port of Dalian, lookouts sighted an "obstruction" about five nautical miles long and two miles wide skimming quickly toward the tanker, the Nanfang Daily said in a report reaching Beijing on Tuesday. "Shortly thereafter, the ship's dining hall, kitchen, bathroom, toilets and other lighted areas were crawling with dragonflies, while the air was full of them," it said. "One crew member went to the kitchen to boil some water and within seconds was attacked by the dragonflies, scaring him so much he turned around and jumped overboard." The newspaper said the attack, in August, lasted about half an hour. It did not say what happened to the crewman. "These sea dragonflies are largely similar to the ones found on land, but their bodies are coloured differently and they are aggressive," the newspaper said, quoting experts. "According to radar readings, this swarm must have contained several million dragonflies."

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#### AVOID PLASTIC BOXES!

Bob Glotzhober

A short note on the last page of the September 1993 issue of ARGIA suggested the use of clear plastic boxes for storing Odonata specimens. There is potential for serious problems in the use of plastic boxes, in that many forms of plastic react chemically with pesticides which you might use to fumigate your collection.

For a number of years we used clear polystyrene boxes at our museum to store skulls next to their associated study skins. We have also used these boxes with collections of small minerals and bird eggs. Recently, however, a friend from another museum pointed out that the common fumigant PDB (paradichlorobenzene) reacts with the plastic. It may take a number of years, but first you'll note a fogging, then the formation of strange diffusion patterns in the formerly clear plastic, next a slight deformation, and finally a "complete meltdown" - quite literally. We were fortunate enough to be alerted to the problem before it had gotten to the final stages. My friend reports having to actually scrape melted (but still quite hard) plastic off of skulls that it had molded itself around. We still use these boxes with bird eggs and minerals, since no PDB is needed in the cases which hold these objects.

I do not know how the plastic used by Rubbermaid or Sterilite might respond to PDB. Likewise, if you use something other than PDB to keep dermestids and other pests out of your collection, you may or may not experience such reactions. Personally I would be very hesitant to experiment with valuable collections unless there were substantial assurances that such chemical reactions would not occur.

Editor's Note: The boxes referred to previously (Sterilite Co., etc.) are of a soft plastic which is probably not harmed by PDB. I have used one for about two years as a fumigating container with lots of PDB for infested specimens. The box shows no signs of attack. The stiff, glassy plastic (polystyrene) referred to above is chemically very different. The cautionary note above should be taken very seriously, however; there are many types of plastics on the market and the chemical sensitivity of each is probably quite different.

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#### WHICH NAMES?

Bob Glotzhober

As the Ohio Dragonfly Survey moves closer to its long-term goals, and a significant publication on the Odonata of Ohio (still 2 to 4 years of field work needed first) we are becoming confronted with several name problems. None of us are taxonomists in the strict sense - none of us have

worked enough to name species or revise names etc. Who then do we accept as a standard for scientific names, and which names do we use in our publications?

I have looked extensively at two sources recently. The first is Rosser Garrison's Synonymic List of the New World Odonata, *ARGIA* 3(2), June 1991. The second is Charles Bridges' Catalog of the Odonata of the World, Second Edition (see the review by Carl Cook in *ARGIA* 5(2), September 1993). They each disagree in a number of significant areas - and in a few cases both disagree with names we have been using, but with different solutions!

I realize that selection of which authority (others could also be listed) to use is somewhat a personal decision. I would like to obtain comments and viewpoints from readers of *ARGIA* to help us reach that decision. Please send your views to: Bob Glotzhober; c/o Ohio Historical Society; 1982 Velma Avenue; Columbus, Ohio 43211-2497. If you wish to phone, I am at (614) 297-2633.

Editor's Note: The International Code of Zoological Nomenclature is the governing code for the use of names. However, the code emphasizes that it makes no taxonomic decisions but only sets forth the rules by which a name can be determined to be "available" or "unavailable". The major problem comes in the judgment of the entomologist as to whether a split is or is not warranted. If you prefer not to recognize someone's subgenera or subspecies or sub-whatever, then you are quite within your rights not to do so. If you choose not to recognize someone's species or genus (i.e., you prefer to lump rather than split), then you are also within your rights not to do so. You are absolutely not compelled to use a name just because it has been published!

There are some murky areas, however. One concerns whether or not a name was really "diagnosed" as the Code requires or was merely suggested without diagnosis (*Tramea* vs *Trapezostigma*). A helpful addition to the code was the provision for conserving well-established names for the purpose of "stability", creating what are called senior synonyms. A case in point is *Libellula semifasciata*, which was earlier named (but forgotten, because of its obscurity) as *L. bifasciata*. Probably the over-riding principle

should be that we know what we are talking about. This is the main reason that the name *Agrion* was abandoned: there were large constituencies which used it for two totally different genera (*Calopteryx* and *Coenagrion*), and the confusion was intolerable.

Some groups have formed their own internal governing bodies to adjudicate some nomenclatural usages within their groups, especially of common names, which have no governing code. Perhaps the DSA could consider this, but I am not enthusiastic.

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**CELITHEMIS MARTHA AND CELITHEMIS ORNATA – ARE THEY THE SAME SPECIES?**

Richard Orr

I have recently found *Celithemis martha* and *C. ornata* occurring together at one of my study ponds at Patuxent Wildlife Research Center in Maryland. *Celithemis martha* is common at the pond while *C. ornata* are fewer in number. After spending a few days observing these dragonflies, recording their behavior and habitat preferences, I got the distinct feeling that I might be dealing with a single species.

I have also run into problems with the morphology. Unless I am missing something, the male's genital pocket, posterior appendages, and other structures appear nearly identical. Color appears to be the only way that I can separate these two species.

The dorsum of the abdomen and basal hindwing spot of the mature male ranges from all dark (typical *C. martha*) to dark with reddish to amber markings (typical *C. ornata*). Some of my Maryland *C. ornata* turn out to have even more red than my Texas *C. ornata* specimens. Many of the males of *C. martha*, that appeared all dark in the field, when examined closely back in the lab had one or more small dull reddish spots located in the otherwise all dark basal hindwing spot or reddish spots on the dorsum of the abdomen. Females to me look identical. The number of cells in the trigonal interspace used to separate the two species in Needham & Westfall does not help and might be more correlated with specific populations within

the species rather than a characteristic between the species.

Could *C. martha* be the northern extension of the same population in which *C. ornata* is a member. It makes some sense that a darker form of a dragonfly species might have a more selective advantage in a northern climate because of its increased ability to absorb solar radiation. However, I can not give you an example of a species of dragonfly that does this. I also can not ruled out that these Maryland *Celithemis* get darker (red turning to black) the older they get.

Am I missing a usable morphological character to divide these (supposedly) separate species? If you know of one or more characteristics that one can use to separate *C. martha* from *C. ornata* please let me know. I would enjoy testing it out on my Maryland specimens.

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**DEVILS FROM THE SKY CAME OUT IN FORCE, THANKS TO WET WEATHER**

From **The Milwaukee Journal**, September 1, 1993 sent in by Susan Borkin

*Dragonflies not only are harmless, they eat insects that bug humans*

by Rachel Konrad

Swooping predators may be fodder for a flighty Hitchcock film, but they're also clouding the skies of Milwaukee this summer, especially at the lakefront Summerfest grounds.

"Oh! It just about hit me!" shouted a woman on a mountain bike who jumped the curb and nearly fell over as she dodged a pair of pesky dragonflies last weekend near the entrance to Mexican Fiesta. "What are those things?!"

Dragonflies are members of the insect suborder Anisoptera. They have four large, veiny wings that rest horizontally. They can have a wingspan of up to 6 inches, and they are one of the fastest flying and most agile, predaceous insects in the world.

In a half-hour, a single dragonfly can eat its own weight in other insects.

Adults usually live near water, but many are stong fliers and can range many miles. They often fly in tandem, with the male holding the female by the back of the head with appendages at the end of his abdomen.

Is it normal for dragonflies to swarm in clouds as heavily as this year?

"Not really," said entomologist Phillip Pellitteri, a professor at University of Wisconsin-Madison. He cited two reasons for the increase in dragonflies, also called darners or devil's arrows:

"First, there are certain types that congregate in swarms, especially to feed on gnats near lakes. This type of dragonfly might have become prevalent near Lake Michigan. This is a feeding congregation.

"Second, the wetness this summer has been a factor - the more ponds, the more dragonflies," he said. "Marshy areas along Lake Michigan are areas where they breed particularly beavily for that lake."

He added that dragonfly populations are lower in lakes with aquatic life, because fish eat the insects while they are young.

Dragonflies spend most of their life, from birth to early adulthood, in the water as "aquatic nymphs," Pellitteri said.

"The adult stage is the only out-of-water stage of their life cycle," he said.

In fact, anglers often purchase dragonfly nymphs for as much as \$2 a dozen to lure fish.

Wisconsin is home to more than 70 varieties of dragonflies, according to Pellitteri. He said one type of dragonfly, the corduliid, was infamous for swarming. They were swarming over the weekend in Cross Plains, just west of Madison.

Many people collect dragonflies to appreciate their multicolored, iridescent bodies.

"They're quite beautiful," Pellitteri said.

Wisconsin varieties have green, blue, yellow and striped bodies with different colored wings. Bulging eyes often account for most of the head.

Aside from aesthetics, dragonflies are also functional.

"They eat the mosquitoes, midges and gnats that annoy humans. In that sense, they are more beneficial to us than many other insects," Pellitteri said.

Dragonflies are known as the devil's darning needles, because superstition has it that they can sew up the eyes, ears and mouth of a sleeping child.

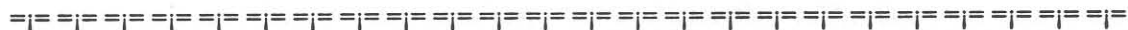
Pellitteri laughed. "They're absolutely harmless," he said. "Given their mouth structure, there's no way they can bite people."

According to the Peterson Field Guide to the Insects of North America and Mexico, adult dragonflies try to bite when handled, and the larger dragonflies can inflict a painful pinch. But they do not sting.\*

In fact, the biggest nuisance they offer to humans is a messy car windshield and grille. There's virtually no chance that a low-flying darter will dent a car or bruise a human.

"They're big but they're pretty hollow," Pellitteri said. "They'll make a big splat but they won't break or harm anything."

\* They may not sting, but it sure hurts when they try to lay eggs in your leg! (editor)









## STATUS OF *SOMATOCHLORA HINEANA*

Several readers have sent me copies of the *FEDERAL REGISTER*, v. 158, no. 190, 4 Oct. 1993, with the notice of proposed listing of *Somatochlora hineana* as an endangered species. If this happens, which is highly likely, this will be the first US odonata species to be so listed. The species is known presently only from two restricted localities in Wisconsin and Illinois.

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## ODONATA OF CUMBERLAND COUNTY, NEW JERSEY

Bob Barber, of Milleville NJ, is in the process of preparing a county list for Cumberland County. It will be parallel to that prepared by Ken Soltesz for nearby Cape May County, which was published in 1991 by the Cape May Bird Observatory. Barber lists an impressive 97 species for the county, also giving locality and habitat information. He discusses the problems that certain genera present, most notably *Sympetrum*, with several highly atypical examples of the species *rubicundulum* and *internum*. The appearance of this manuscript shows us yet again that the study of Odonata is growing vigorously.

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## *TRAMEA CALVERTI* REAPPEARS IN NEW JERSEY IN 1993

One of the choicest bits of news in Barber's Cumberland County list was the news that *Tramea calverti*, whose appearance in coastal New York and New Jersey in 1992 rocked the northeastern dragonfly establishment, was sighted again in 1993. The sighting (24 June, near Delaware Bay in the southeastern corner of Cumberland County) raises the possibility that some of the numerous 1992 matings and egg layings may have produced a viable over-wintering population. On the other hand, this may simply represent a very early migrant specimen. Barber mentions another 1993 sighting in Cape May. This species presents a fascinating challenge that we should respond to: the documentation of the possible establishment of a highly disjunct population of a tropical dragonfly in coastal New Jersey.

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## ENDANGERED SPECIES IN GREAT BRITAIN

Hal White recently e-mailed me a message directing my attention to a report in *NATURE* on the strategy for selection of suitable places in Great Britain for protection of endangered species. (Prendergast et al, *Nature* vol. 365, p. 335-337, 1993, "Rare species, the coincidence of diversity hotspots and conservation strategies"). This report is of interest in that it uses information on Odonata (as well as butterflies, breeding birds, aquatic plants, and liverworts) to determine where "hotspots" occur. A "hotspot" is a 10-km grid square with a large number of species.

The study concludes, among other things, that "hotspots" for Odonata are not the same as "hotspots" for butterflies, etc. This may not be surprising, as these diverse groups select rather different habitats to live in.

This study seems flawed to me for several reasons. These "hotspots" are located, not surprisingly, near large cities and are almost all in the south of England. They are "hot" probably because they have been extensively visited and collected. They are not "hot" because they contain species that are generally rare; indeed, most of the species in these squares are fairly common.

The authors admit that Great Britain has another problem: it has already been severely degraded by millennia of human occupation. Another problem that they do not mention is that the most severe degradation was caused by Pleistocene glaciation, after which faunal restoration was hindered by insular isolation of this land. This is the main reason why I can find, on a reasonably good day, as many species around a good pond in the U.S. as have ever been recorded for all of Great Britain.

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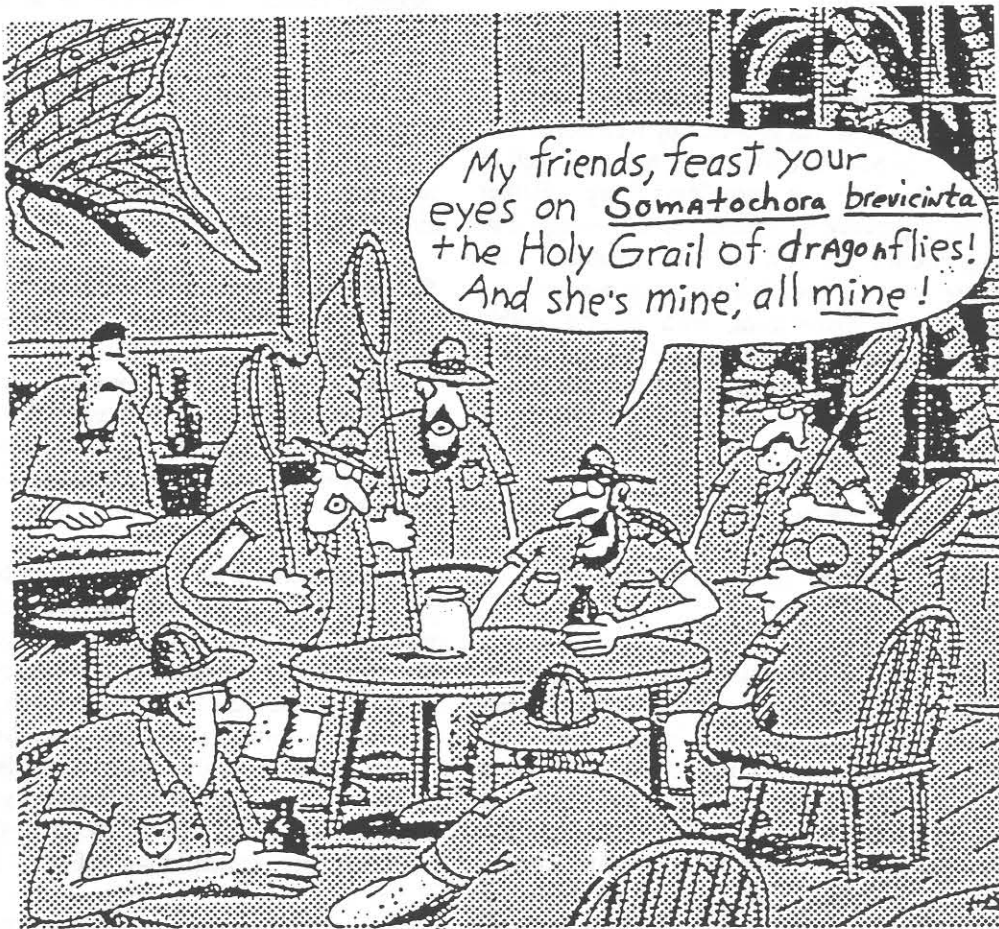
## ENDANGERED SPECIES IN NORWAY

Hans Olsvik has sent me a report on Norwegian endangered Odonata (*Fauna Norv. Ser. B* vol 39, p. 1-21) that he and Dag Dolmen have written. This report notes that one species (*Orthetrum cancellatum*) has probably become extinct.

The status of 17 other species is described, including two recently added species: *Somatochlora sahlbergi* and *S. flavomaculata*. Many of the species are far more common to the south, reach their northern limit in Norway, and not surprisingly face severe problems at the margins of their ranges. One of the most recurring themes in this report is distressingly familiar: wetlands, including rivers, are being increasingly degraded by agricultural development.

ME A CULPUM

For years I have been referring to cast skins as "exuvium" (singular) and "exuvia" (plural). It turns out that not only is the word feminine, but it is a plural. Thus, the correct form is "exuviae" for a single cast skin (like "pants"). I propose a compromise: "exuvia" for just one and "exuviae" for more than one. If some modern clothing advertisers can sell you a "pant" then I guess that a *Gomphus* can shed an "exuvia"



Regrettably, Professor DeVogt's boasting fell on too many jealous ears, and that night, as he stumbled from the bar, he was *acetoned* by an unknown assailant and "relieved" of his trophy.

## BACK ISSUES OF ARGIA AND THE BAO

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# ARGIA

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