



## Canada Darner with unusual thorax pattern

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After attending an ornithological meeting in Grayling (Crawford Co.) on 28 Aug 2004, I had a little bit of time to hunt for odonata before heading back home. Consulting a map, I chose to explore Howe's Lake, a small sandy lake north of M-72 west of Grayling. There wasn't a lot actually plying the lake itself, but the wet, grassy depressions near the lake shore had several species of *Lestes*, Saffron-winged Meadowhawk (*Sympetrum costiferum*, a county record), and quite a few *Aeshna*'s patrolling lazily or ovipositing in the shallow water.

I netted a few Canada Darners (*Aeshna canadensis*), and some Black-tipped Darners (*A. tuberculifera*, county record). It appeared that all the blue darners at the site were these two species, until I netted one with broken thoracic stripes, which I took to be a Variable Darner (*A. interrupta*). When I returned home to sort through the specimens, I turned this specimen over, I found that the other side of the thorax was the standard Canada Darner pattern. A closer examination revealed that this was indeed *canadensis* in all other characters, except that one side of the thorax.



Top: The side of the thorax with the broken stripes. Bottom: The side with typical *A. canadensis* pattern.

While I've found little on this phenomena in the literature, it is apparently not without precedent. For me it underscores the importance of actually collecting specimens – or in the least netting them and carefully examining them in the hand – in order to verify the identity. Even if I had seen this individual perched, I would have misidentified it had I only seen the one side (Variable Darner would have been a county record). This interesting specimen is in my personal reference collection.

## 2004 dragonflying in Mecosta Co.

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To say the least, dragonflying in Mecosta County during 2004 was BOR-ring. It seems this was a fairly miserable year statewide. My date range ran from April 16 for the first Common Green Darner (*Anax junius*) and ended November 9 with the last few Autumn (Yellow-legged) Meadowhawks (*Sympetrum vicinum*) succumbing to the cold. This was the first year without my finding a county record since I began working the county in 1998. The closest to a record was col-

### INSIDE:

Twin-spotted Spiketail:  
sight record for Wayne Co.

ID of *Epitheca costalis*

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## Mecosta Co., cont.

(Continued from page 1)

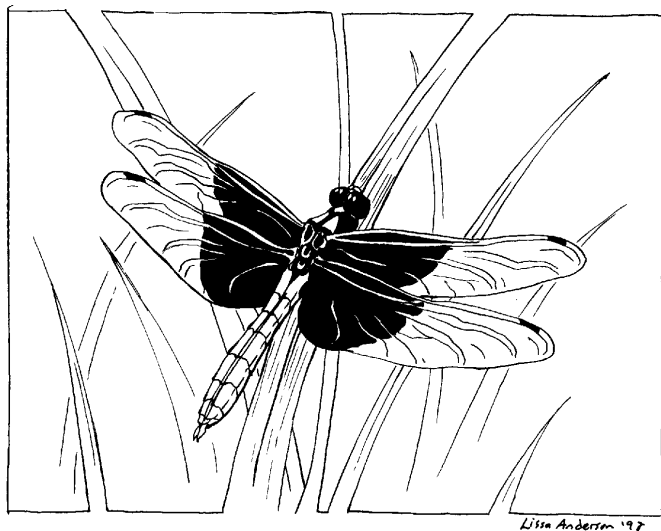
lecting the first adult Cyrano Darner (*Nasiaeschna pentacantha*) for the county. One had been photographed in June 1998 and a larval record was collected in 1999.

I visited the two Ringed Boghaunter (*Williamsonia lintneri*) sites four times in late April and early May on the few warm days that occurred during that time. None were found, nor were any in 2003. Dip netting for larvae here produced only a few underdeveloped Libellulids. I'm not sure enough is known about *W. lintneri* to be worried that these sites have lost their populations; perhaps they are just cyclical and can arrest development until conditions are right.

Though the lakes were periodically good, for the most part, they seemed lacking and the hatches later than expected. Hanna Lake, where I logged 26 species in about two hours in 2003, was quite disappointing this year on three visits, eleven species being the highest number found. The one exception was a July 21 visit to Townline Lake where an emergence of Enallagmas was going on. *E. carunculatum*, *E. triviatum*, *E. hageni*, and *E. geminatum* were found good numbers. Otherwise, I found lake and nearby open areas around the county to be significantly diminished from past visits.

The streams, such as the Muskegon and Little Muskegon River, and a modest stream I visit in Colfax Township, were seemingly devoid of odes this year. The county experienced considerably more rain than usual this spring, and temperatures were cool, resulting in streams over their banks well into June. I agree with Mark O'Brien's contention that much of the stream odonate fauna may have been washed downstream, killed in the process or became food for fish.

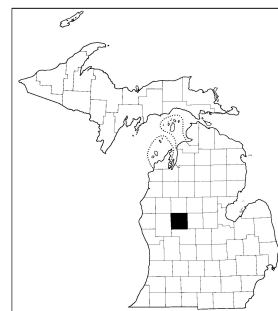
Carl Freeman and I canoed the Little Muskegon on June 18,



finding sixteen species, with several being conspicuously lacking. While we found most of the usual suspects, both of us remarked on how few of each species were present. I also canoed the same sections on July 23 with Pat Cady and found the stream odonate fauna remarkably lacking, finding only a few individuals of each of ten species. A trip down the Muskegon from Paris to Big Rapids on July 20 found only small numbers of six species of damselfly nymphs. The only dragonfly was one Dragonhunter (*Hagenius brevistylus*). Several Gomphids, Macromia, and Stylurids should have been observed.

In the UP, I had somewhat better luck, during my third survey of the Ottawa National Forest for the Forest Service. This year I was working the Three Corners Vegetative Management Project where Ontonagon, Iron, and Gogebic counties come together. Through the haze of deerflies, mosquitoes, and the ticks crawling through my clothes, I found two of the eight target species. One, the Midland Clubtail (*Gomphus fraternus*), seemed to be at peak of emergence, with about 150 observed in roadside and open areas along the Ontonagon River. Five Ocellated Emeralds

(*Somatochlora minor*) were also found among the alders and sedge meadows of McGinty Creek. I also caught several Subarctic Bluets (*Coenagrion interrogatum*) a county record for Iron County and one of the few times this species has been captured in the UP.



In case you were wondering, "Where in the heck is Mecosta Co.?"

Though butterfly collecting during this year seemed to be worse than dragonfly collecting, I located eight lep records for the UP while doing my odonate survey. These were Canada Swallowtail (*Papilio Canadensis*), Little Wood Satyr (*Megisto cymela*), Silvery Checkerspot (*Chlosyne nycteis*), Inornate Ringlet (*Coenonympha tullia inornata*), Monarch (*Danaus plexippus*), Hobomok Skipper (*Poanes hobomock*), Dreamy Duskywing (*Erynnis icelus*), and Tawny-edged Skipper (*Polites themistocles*).

Closer to home, I participated in the BioBlitz at Chippewa Nature Center on September 18. Dragonflies were also conspicuously absent here, especially Aeshnids, despite very good habitats for ode hunting. The best find was a county record of a Calico Pennant (*Celthemis elisa*) which was also a significantly late record. The area of the confluence of the Pine and Chippewa Rivers did hold a number of American Rubyspots (*Hetaerina americana*) and Powdered Dancers (*Argia moesta*).

## *Twin-spotted Spiketail: New sight record for Wayne County and a record late date*

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The Twin-spotted Spiketail (*Cordulegaster maculata*) has been recorded from most of the UP and northern LP counties in Michigan, and from about a third of the southern LP counties (14), including six in the southeast (MOS website).

On the cool morning (58° F, -9:00 AM EST) of 22 Aug 2004, while checking mist nets at my bird banding station in a closed area of Lake Erie Metro Park, Wayne Co., I encountered a Twin-spotted Spiketail hunting over an open grassy field surrounded by shrub, hedgerow, and woodland. Initially, I thought it was the Canada Darner (*Aeshna canadensis*) that I had seen a short time earlier. But, when it landed near me I immediately saw the paired yellow triangular spots on the abdomen and I suspected it was a *Cordulegaster* instead, but I wasn't sure which species. I got my digital camera out of the car and took a few photos, hoping to identify it when I got home, as I had no dragonfly references handy. Due to the temperature, it was very cooperative. I then turned my attention back to the bird I needed to band at that moment. I did not take the spiketail as a specimen because I had no way to keep it from getting damaged, and my purpose this day was bird banding, not dragonfly collecting. I determined the species once I got home, and also determined that it was a male. Color photos of this individual can be viewed on my website at: [www.amazilia.net/images/Inverts/Odonata/Cordulegaster\\_maculata.htm](http://www.amazilia.net/images/Inverts/Odonata/Cordulegaster_maculata.htm).

The flight period for the Twin-spotted Spiketail in our region is described as late May through the end of July (Holder 1996, Legler 1998, Mead 2003), and to early August in New Hampshire (Dunkle 2000). This is likely a record late date in our region, and possibly within the entire range of the species.

Mead (2003) describes the habitat for *C. maculata* as "clean, clear streams and small rivers in wooded areas..." To the west of the site (within 0.25 mile) is an area of freshwater marsh that drains south into the Huron River, and to the south of the site (also within 0.25 mile) is a wooded creek near the Pte. Mouillee State Game Area Headquarters which also drains southeast into the mouth of the Huron River. More freshwater marsh and a stream (not wooded) that drains into Lake Erie occurs to the east of the site. To the north is an open woodland, and a golf course is to the northwest. It seems possible that streams in this area could have provided breeding habitat for the species, though it seems equally possible that this individual was simply a very tardy vagrant.

### Literature Cited

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- Holder, M. 1996. The Dragonflies and Damselflies of Algonquin Provincial Park. Algonquin Park Tech. Bull. No. 11. Friends of Algonquin Park.
- Legler, K and D. and D. Westover. 1998. Color Guide to Common Dragonflies of Wisconsin.
- Mead, K. 2003. Dragonflies of the North Woods. Kollath-Stensaas Publishers, Duluth, MN.



**Ed. note:** Canada Darner would also be a county record; there are currently only old literature records. Allen's Canada was not netted or photographed, so this species remains unverified for the county.

## *Tips and tricks of the trade*

*A continuation in our series...*

**Specimen boxes.** For specimen boxes in the field, I use Maxalt cases. Maxalt is a migraine headache medicine. I get my boxes from a pharmacist. They come in two sizes, and the wider one will hold about three or four large or eight mid-sized dragonflies in standard glassine envelopes, or about a dozen damsels. The boxes are slightly curved so they fit your pocket well.

Another specimen box I have found recently is Cabella's medium size fly box (#TR-31-5614 003 for \$4.99 each, 2004 spring-summer fly fishing catalog). It measures 5 3/8 by 3 3/4 by 1 3/8 inches (there is also a size smaller and a size larger box available). This will hold about 15-20 specimens without crowding. Though I have not used this yet, it fits nicely in the pocket of field pants and the field shirt described below. They come with glued-in Styrofoam inserts that can be cleanly removed with a little effort. – Stephen Ross, Mecosta Co., MI

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**This year's  
first-of-season  
Common Green  
Darner was seen  
by Margi  
Chriscinske on  
April 9 in Ann  
Arbor.**

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**Field shirts.** I have long been looking for a good field shirt. I have obtained several from such outfits as TravelSmith, Columbia, and Cabella's. All have one problem: breast pocket flaps that will not fit over or close on a field notebook. Cabella's sells the Ultimate Guide shirt in their 2004 spring-summer fly fishing catalog with pockets that are large enough for a Rite-in-the-Rain notebook and the Cabella's fly box mentioned above. These sell for \$49.95 (#TR-90-2551) and come in several colors. They also have zippered compartments below the pockets. (Don't confuse this with their regular Guide shirt, which has the smaller pockets). If you don't mind looking like a fisherman, this is the shirt. – Stephen Ross, Mecosta Co., MI

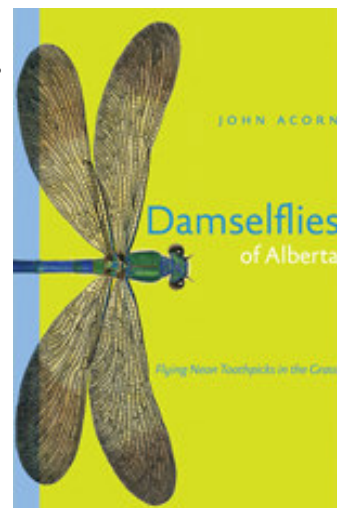
**A handy lens.** A hand lens is an essential tool to identify many odes in the hand. Fishing around for a hand lens in your pack is a pain. I solved this problem by purchasing a retractable cord used for corporate name badges, available at office supply stores. One end is attached to my pack, the other to the hand lens. Thus, the lens is always handy and can't get lost. – Julie Craves, Wayne Co., MI

**No sweat.** This tip is not specifically for those working with odes, but can apply to any field work in hot weather. I recently attended the memorial service for the father of a friend. Attendees were reminded of Sterling Cumming's many novel habits. One was preventing a damp forehead and unsightly stains on his hat while working outdoors by applying a thin, absorbent, disposable, adhesive-backed pad to the inside of the sweat band of his hats. These items are usually marketed as women's pantyliners, but obviously have other practical uses for those who like to think out of the box. – Julie Craves, Wayne Co., MI

## *Book Review: Damselflies of Alberta – Flying Neon Toothpicks in the Grass*

*Damselflies of Alberta – Flying Neon Toothpicks in the Grass*, by John Acorn. 2004. 156 pp., softcover, University of Alberta Press ([www.uap.ualberta.ca](http://www.uap.ualberta.ca)); ISBN 0-88864-419-1. (\$29.95 Canadian).

I truly enjoy reading an entomology book written with enthusiasm about the subject, and moreover, that damselflies are the subject makes it even more attractive. John Acorn is an entomologist in Alberta. He's one of those figures in my profession that pop up now and then with an interesting article on the life history of an insect, or a new book about some related subjects. Until recently, I did not realize that he was also an avid odonatologist. John has authored "*Damselflies of Alberta – Flying Neon Toothpicks in the Grass*," and the book, like its subjects in the title, is a gem. John is the anti-Needham. He writes with humor and honesty, and despite the simplicity of the main title, this is no mundane listing of the critters from a region with maps and photos. In many respects, he makes the reader feel as though he were on a field trip, as the text is not the least bit dry. The introductory chapters on biology, ecology, and behavior are very well written, fun to read, and are probably some of the best written generalized accounts on damselflies that I have read. I can only find a couple of faults – in several photos, the images look pixelated, so I am guessing that some low-resolution versions of photographs were enlarged.



There are only 22 species of Zygoptera in Alberta – it's a lot farther north than Michigan, and a lot of species that we have drop out before they get that far north. For a small fauna, there have been a number of characters in Alberta that have studied them, and the author has a nice historical section on the people that have worked there. Following that is a really nice section on how to study damselflies. He's sensitive to those that do not want to collect, but obviously, he makes a good case for why we should take specimens.

The section with species accounts is also easy to use, and contains a great deal of information from data gathered in Alberta on behavior, physiology, and ecology. The maps show Alberta and North America separately, so one gets a feel for the entire range of a species, not just where it is in one Canadian province. Each species' synopsis has a pronunciation guide, identification tips, etymology, ecology, notes on that species, and of course, a color photograph. A supplemental key is written for easy reading, and is very well done. A glossary and references round out the latter part of the book. But wait--- there's more. At the very end is a gallery of illustrations showing dorsal views of the species in all their various color morphs, as well as a selected group of male claspers. As many of you now know, many species of Odonata have different color phases, which change as the insects mature, and of course, will also differ between the sexes.

The *Damselflies of Alberta* is an enjoyable book. It will introduce you to the small world of damselflies, and the larger role that they play in ecosystems. John Acorn's account of their biology and distribution in Alberta is not at all provincial. There are many gems to gleam from his prose, and I highly recommend this book. It is my surprise read for 2005. — Review by Mark O'Brien, Insect Division, Museum of Zoology, University of Michigan, Ann Arbor, MI 48109-1079.

Ed. Note: Mark omits what might be the most unusual aspect of this book. Each species account begins with an original limerick. I'm not saying they are great, but they sure are different! — J.A.C.

# Odo-blogging

Perhaps it's faddish, but Mark O'Brien and Julie Craves — both desperate to appear young and hip — have joined the blogging craze, each by establishing online web logs (“blogs”) devoted to odonata.

Mark's is entitled **Michigan Odonotes** (<http://michodo.blogspot.com>), and focuses on Michigan odonata and (even flimsily) related topics.


Julie, authoring under the alias “Nannothemis” along with her husband Darrin O'Brien (masquerading as “Stylurus”), is chronicling her adventures in search of odes in **Urban Dragon Hunters** (<http://urbanodes.blogspot.com>). She's already blogged about insects in Texas, so don't expect her to stick to her geographic focus.



**Michigan Odonotes**  
A place for my notes on the Dragonflies and Damselflies in Michigan, as well as tips on collecting, observing and anything else that is even remotely related...

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**Thursday, March 10, 2005**  
**Dining Out**



**Contributors**

- ◆ Mark
- ◆ Nannothemis

**Previous Posts**

- ◆ Spring Thoughts
- ◆ Must Have Book for 2005
- ◆ Larvae -- Lots of them
- ◆ The truth
- ◆ It's February and its snowing, so what?



**Calopteryx1small**  
Originally uploaded by [argusmaniac](#).


This *Calopteryx maculata* female was feeding on small flies near the River Raisin in SW Washtenaw Co. in June 2003. I followed her around and shot several frames before she flew off and I could not take the mosquitoes any longer.

With the lengthy stay of the chill of winter, when I look at shots like this, I recall how nice it will be to feel warmth and see green, mosquitoes and all.

posted by Mark @ 9:16 AM

**0 COMMENTS:**  
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 **URBAN DRAGON HUNTERS**  
A DIARY OF THE SEARCH FOR ODNATA (DRAGONFLIES AND DAMSELFLIES) IN SOUTHEASTERN MICHIGAN...AND SOME OTHER PLACES...AND SOME OTHER INSECTS.

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FRIDAY, APRIL 15, 2005


**The Friday Ark**  
The entry below is included in today's **The Friday Ark** by the Modulator, a carnival of photos that spans many taxa. Enjoy!

POSTED BY NANNOTHEMIS. [PERMALINK HERE](#) [0 COMMENTS](#)

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THURSDAY, APRIL 14, 2005

**While we wait for odonata**




*Hemipenthes sinuosa*, a bee fly

**ABOUT URBAN ODE HUNTERS**  
Most ecologists like to work in pristine areas. Urban areas are largely ignored. Since my husband and I began our survey of Wayne Co., MI in 2001, we have recorded 39 new species for the county, bringing the total to 89 species (there's a link to the checklist below).

**NANNOTHEMIS**  
Nannothemis is an ornithologist, whose research focus is on the importance of urban natural areas to birds.

**STYLURUS**  
Stylurus is the husband of Nannothemis. He is an engineer, talented birder, keen naturalist, and pretty good with an insect net when his "old soccer injuries" aren't bothering him.



A quick survey of blog search engines revealed that there are few blogs about insects, and apparently Michigan Odonotes and Urban Dragon Hunters are the only ones out there showcasing odonata. An examination of common blog-topic searches also revealed that nobody is looking for blogs on odonata, either (although one search engine showed 6,811 inquiries on crayfish). But never mind that! Clearly, Mark and Julie are trendsetters. Surf on over, take a look, and leave encouraging comments!

## How to identify *Epitheca costalis*

Mark O'Brien

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University of Michigan, Ann Arbor, MI 48109

Until very recently, there were only three species of *Epitheca* (*Tetragoneuria*)\*\* that could be found in Michigan, excluding the large Prince Baskettail, *Epitheca* (*Epicordulia*) *princeps* (Kormondy 1959, O'Brien 1997). These three smaller species are somewhat similar in overall appearance, but differences in wing coloration and genitalia morphology make it quite easy to identify them (Kormondy 1959). However, all that changed in 2003, when Nick Donnelly (2003) found specimens from Ohio of what he considered intergrades and some more or less typical specimens of *Epitheca costalis*. He then asked me to look in our collection to see if we had any specimens that were identified as *E. cynosura*, but might just be *E. costalis*. This was covered in *Williamsonia* (O'Brien 2004). The short story is that we apparently DO have populations here in Michigan of what Donnelly believes are *E. costalis*. These populations are most likely in the southeastern part of Michigan, but it is just as likely that they could also be found in the southwestern part of the state.

The best way to separate *Epitheca costalis* from *cynosura* is by the narrowed third abdominal segment of *costalis*. The male genitalia are similar, but do differ slightly. *Epitheca cynosura* males have a somewhat blunted tip to the cerci (claspers), whereas *E. costalis* the cerci tips are narrowed apically, and they are more elongate than *cynosura*. *Epitheca spinigera* also has a narrowed third

abdominal segment, but that species has a small spine on the cercus, which is quite obvious with a hand lens. The figures below (Fig. 1) illustrate the differences. Males of *E. canis* are easiest to distinguish on the basis of genitalia, since the cerci look like a dog's head in profile.

**Habitats** -- I do not see any appreciable differences in habitats -- I collected *E. costalis* specimens near small man-made ponds as well as a section of a millpond on the River Raisin in Washtenaw Co. *Epitheca* adults are usually found along the margins in most ponds and lakes with adequate organic substrate and vegetation along the margins.

**Flight periods** -- If *E. costalis* were flying at a later period than the others, it would make life easier. However, they are flying at the same time as the other species of the genus -- late spring to early summer. Figure 2 presents the flight periods for *E. spinigera* and *E. cynosura* in Michigan -- the two species which are likely to be seen with *E. costalis*.

**Collections** -- I suggest that anyone wishing to collect specimens of *E. costalis* make sure they save a few in at least 75% ethanol. That way, they could be used for anyone wishing to conduct genetic analysis in the future. Keeping vouchers has never had a better case made for it than by this appearance of *E. costalis* in Michigan. Imagine if we had not kept any, and just based our records on sight ID. That's one of the reasons vouchers are important -- they support one of the

foundations of scientific inquiry -- the ability to repeat or review a fact. Without vouchers, we will never figure this mess out! If you observe swarms of *Epitheca*, catch some and see what species are represented in the swarms -- is it all one species or a mixed lot? If you do catch what you believe are *E. costalis*, are other *Epitheca* species flying nearby?

\*\* (Note- I am using the generic assignment of *Epitheca*, not *Tetragoneuria*

(Continued on page 8)

### Key to Males of *Epitheca* (*Tetragoneuria*)

- 1 Third abdominal segment noticeably narrowed across the width — 2
- 1' Third abdominal segment not narrower than adjacent segments — 3
- 2 Cerci with ventral spine = *Epitheca spinigera*
- 2' Cerci without spine = *Epitheca costalis*
- 3 Cerci bent, subapical tooth, - in profile looks like a dog's head = *Epitheca canis*
- 3' Cerci elongate, no teeth = *Epitheca cynosura*

## *How to identify Epitheca costalis*

(Continued from page 7)

*ria*, which is used in Needham et al. 2000. No systematic proposal was made to elevate *Tetragoneuria* back to full generic status. It was just kept the same name that was used in earlier editions of Needham and Westfall. That alone does not constitute a change in nomenclature.)

### Literature Cited

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O'Brien, M.F. 1997. Michigan Odonata Survey Collector's Handbook. 78 pp.

O'Brien, M.F. 2004. *Epitheca costalis* (Stripe-winged Baskettail) in Michigan: Update. *Williamsonia* 8(3):1-2.

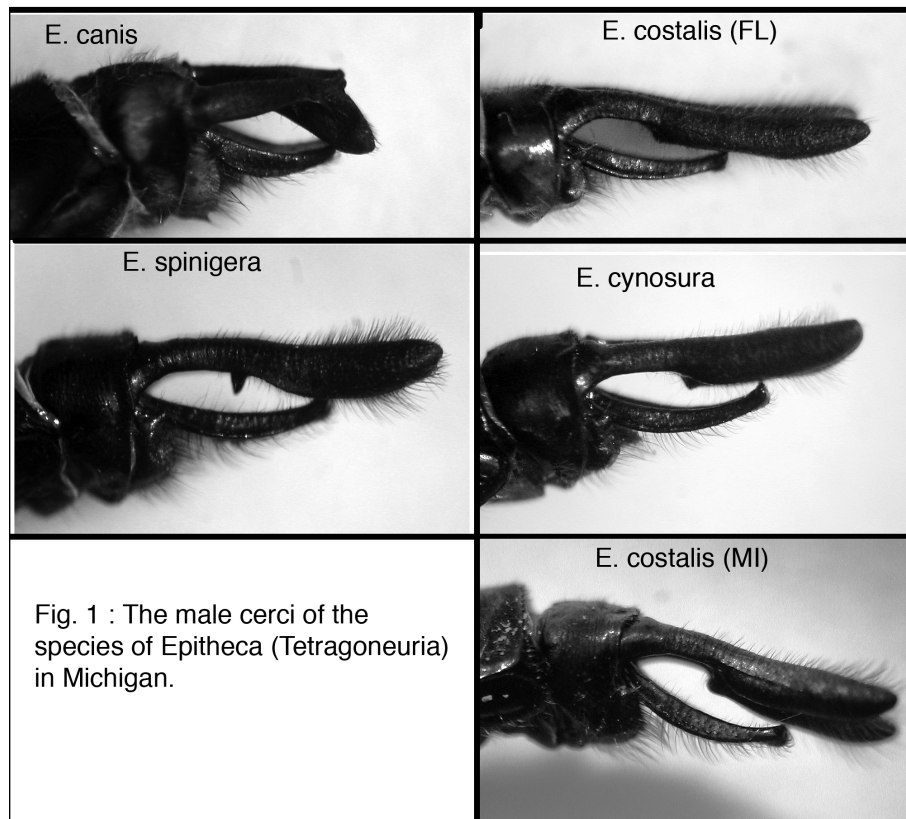


Figure 2 on next page.



## *How to identify Epitheca costalis*, conclusion

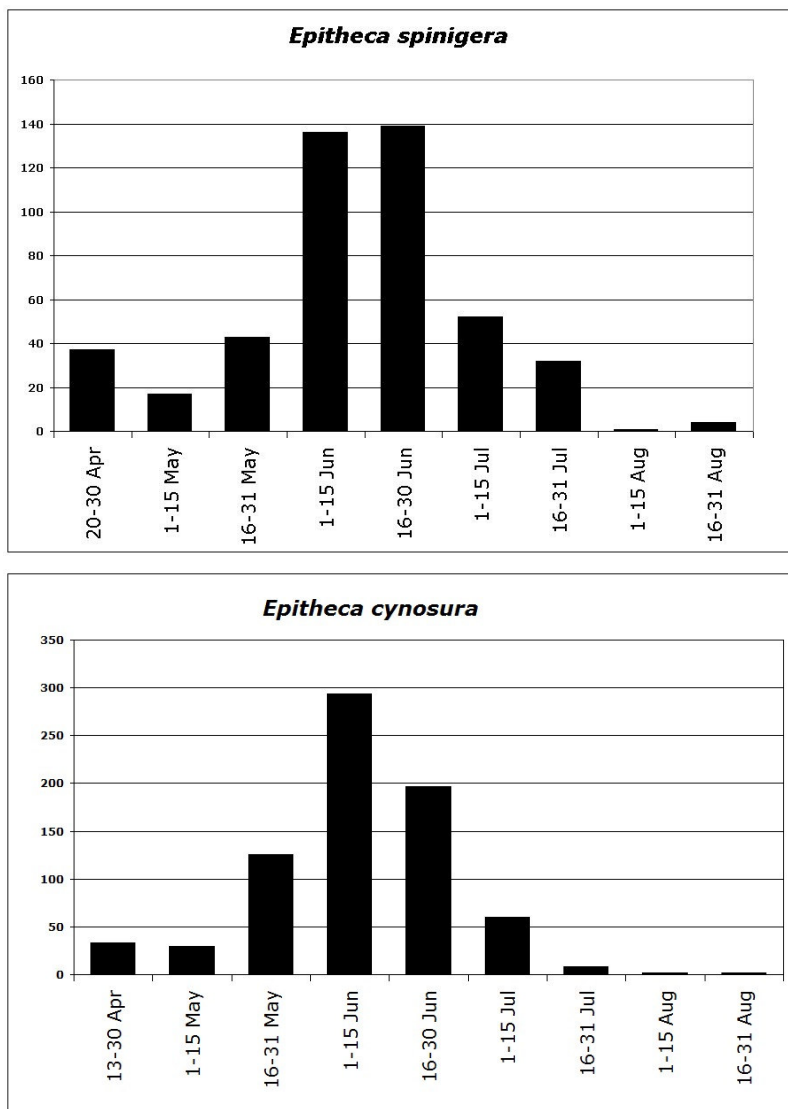


Figure 2. Flight dates of two species of baskettails likely to fly simultaneously with Stripe-winged Baskettail (*E. costalis*): Spiny Baskettail (top) and Common Baskettail (bottom). Y axes are number of records.

## Upcoming Meeting

### 2005 DSA National Meeting

8-12 July 2005 Arnprior, Ontario, Canada

Paul Catling (catlingp@agr.gc.ca), Colin Jones, Brenda Kostiuik

It is a great pleasure for us to welcome the DSA to Canada. Useful information is summarized below. Please contact us if you have any questions.

#### The Place and the fauna:

The town of Arnprior (www.arnprior.ca/) is situated on the Ottawa River at the mouth of the Madawaska River. Within 50 miles, 110 species of dragonflies have been recorded. Ontario has 168 species (one with two subspecies). In town on the Gillies walking trail beside the river (and within several blocks of the our conference hotel) is a spectacular natural forest of White Pines over 100 years old on the high banks of the Ottawa River. Along the river beside this woodland, locally called "The Grove", up to 30 Elusive Clubtails (*Stylurus notatus*) emerge in only 10 m of shoreline (number 44 on the website "townmap" - click on community for the map). Other species often associated with rivers such as *Gomphus fraternus* and *Gomphus vastus* are also present on the river and so is the dusk-flying *Neurocordulia yamaskanensis*. Several dragonflies with rather restricted North American distributions are present in the area including *Arigomphus cornutus*, *Arigomphus furcifer*, *Gomphus borealis*, *Ophiogomphus anomalus*, *Cordulegaster diastatops* and *Neurocordulia michaeli*. Bogs, fens and a variety of wetlands in the immediate vicinity will produce many other species including the smallest dragonfly in the north, the Elfin Skimmer (*Nannothemis bella*). We will be watching for *Gomphus ventricosus* last seen on the Ottawa River many decades ago. On other rivers we will be looking for the first Ontario records of *Ophiogomphus howei* and *Ophiogomphus aspersus*. *Williamsonia lintneri* may be waiting to be discovered in a nearby bog.

#### Plan for the meeting:

Attendees will arrive and register in the evening of 8 July and depart on morning of 12 July. Two days will be spent on field exploration. Although the field trips have not yet been completely arranged, we will likely visit the Petawawa River, the Mississippi River, White Lake Fen, Beachburg Pools, and Westmeath bog as well as small woodland springs and lake shores. We will make a special attempt to see some of the boreal species which occur in the region, such as *Coenagrion interrogatum* which barely occurs in the United States (even Alaska!). Insect repellent, bug jackets, sun screen, lunch, drinks, appropriate clothing and extra (dry) clothes will be needed on field days, as well as cameras, binoculars and nets.

There will be a banquet or BBQ on the last day and an evening program. One day will be devoted to both popular and scientific presentations and workshops. All will require scheduling and an official "call for papers" (presentations, workshops, etc), including brief abstract, will be sent out in the next newsletter. It is now 10 months away - not a bad time to start to prepare a presentation! There will be a meeting room with display area. Anyone wishing to put on a display or put up a poster should contact us to ensure space availability and other requirements (tables, electrical outlets).

#### Post Conference Trip:

On 12 July, a 2-3 day post-conference field trip will depart, probably for areas to the north. The plans will be finalized by participants just before and during the meeting. It is likely that the group will be studying diversity in particular habitats such as fens and /or rivers. There is a possibility that two Emeralds not previously recorded in Ontario (*S. hineana* and *S. brevicincta*) occur in fens of the Lake Timiskaming region about 180 miles NW of Arnprior.

#### Travel:

Field travel arrangements will be made for anyone without transportation during the meeting. It takes 50 minutes to travel from the Ottawa airport to Arnprior. Take the airport expressway to Queensway West (which becomes Hwy 417) and proceed directly to Arnprior (do not take the hwy 7 exit to Toronto). The cab fare from the airport to Arnprior is CDN\$ 114.00. Car rental (Budget, Avis, Hertz, etc) is available at the airport (see under "ground transport" after "welcome" at the airport website) and costs CDN\$ 75.00 per day (small car, 1 driver, 250 km per day free, \$ 0.12 per additional km). The least expensive way to get to Arnprior is to take a bus from the airport to the bus terminal in Ottawa on Catherine Street, then take the Greyhound bus to

(Continued on page 12)

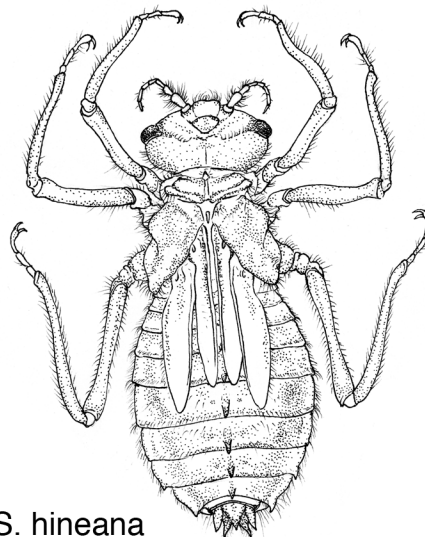
## New illustrations for web site and future guide(s)

Mark O'Brien

Museum of Zoology, Insect Division

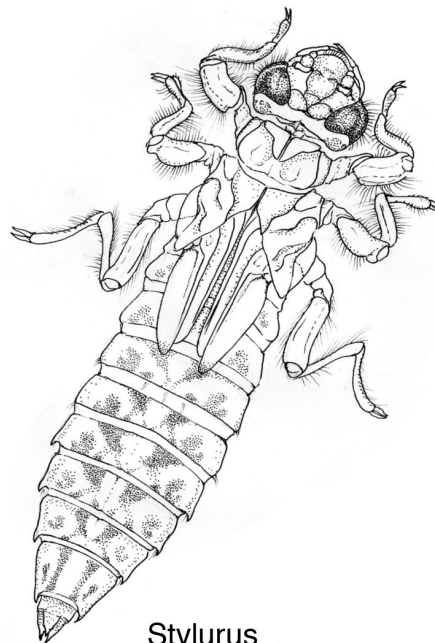
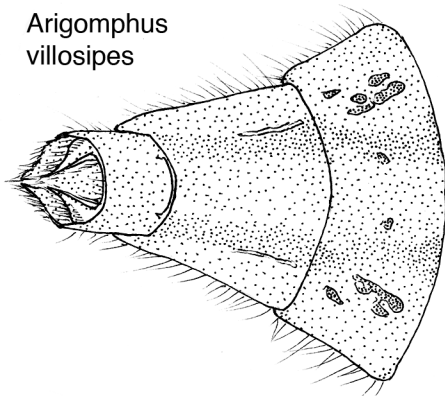
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This past semester I had the good fortune to find a student (or rather the student found me) that was interested in illustration of insects. Well, that has always been the one part of this project that has been the slowest in developing – illustrating some of the species that occur here, especially as immatures. Susan Fawcett has been helping to improve our online web key to the Odonata larvae of Michigan by making pen and ink illustrations of some of the species that had not yet been pictured on our web pages. I had Susan focus on a few genera that needed illustrating – *Somatochlora*, *Stylurus*, and *Arigomphus*. Unfortunately, we did not have specimens all of the species listed in our key, but we did have most of them, so Susan was able to make some great additions that will eventually be incorporated into the web pages. I was able to borrow specimens of *Somatochlora hineana* from the Illinois State Museum, so we were able to include those. If we were to do additional illustrations in the same style, we'd have to do some fund-raising, as I paid Susan out of the MOS Account. I hope you appreciate these samples here, which have been reduced to fit on this page. If you believe that we should proceed with many more pen and ink images, let me know, and please make a donation so that we can pay artists for their work.



*S. hineana*

*Arigomphus villosipes*



*Stylurus scudderi*

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## Meeting, cont.

*(Continued from page 10)*

Arnprior. Local bus schedules are available at the airport. Currently the fare to travel downtown is 2 tickets (\$ 1.80 at the transportation desk on level 1 or \$ 2.60 in exact change) and information on the Greyhound bus is available from Greyhound (800-661-TRIP.) The buses travel to and from Arnprior about 3 times a day and the cost one way is CDN\$ 20.00.

### Accommodation:

The main conference facility will be the Quality Inn on 70 Madawaska Blvd (number 27 on the website "townmap" - [www.arnprior.ca/](http://www.arnprior.ca/) - click on "community" for the map): The cost of the double occupancy rooms is CDN\$ 95.20 and this includes 12% taxes. Sixty rooms have been reserved for attendees (July 8 to 11 inclusive) but the reservations will only last until 8 May (60 day hold). Call 613 -623-7991 to book a room. For more information visit the Inn's website at [www.arnpriorqualityinn.com/](http://www.arnpriorqualityinn.com/). Attendees should confirm costs with the Inn nearer to the meeting date since there is always a possibility that the cost of accommodation will be reduced somewhat. It is also necessary to indicate attendance at DSA in order to qualify for the reasonable deal that has already been negotiated. Alternative motel accommodation several blocks away on Daniel Street includes Twin Maples Motel (613-623-4271) and Arnprior Motor Inn (613-623-7906). There is also the Country Squire Motel (613-623-6556) on the edge of town near the Trans-Canada Highway. These alternatives are about CDN\$ 20-30 less per night but have less facilities.

Camping is available in Fitzroy Harbour Provincial Park ([www.ontarioparks.com/english/fitz-facilities.html](http://www.ontarioparks.com/english/fitz-facilities.html)) 10 miles NE of town. The electrical sites are CDN\$ 27.25, non-electrical CDN\$ 23.25 (2004 rates) and showers, laundry facilities, park store and playground are available. Campsite reservations can be made up to 5 months beforehand (and reservations should be made months ahead) by calling the reservation number 1-888-668-7275. The CDN\$ 12.00 reservation fee is non-refundable. For more information on the park and map, see the website.

### Facilities:

The town has several restaurants, a few nice pubs, lots of shops, a mall, and can supply most shopping requirements. For families there is a museum and recreational centre with pool in town (see the Nick Smith Centre on the web site). There are walking trails in town and maps and trail guides are available in the motels, at the museum and elsewhere. Outside town, younger children will enjoy storyland park ([www.storyland.on.ca/](http://www.storyland.on.ca/)) (1-800-205-3695), the fishing at the Opeongo Mountain Trout Farm ([www.omt.on.ca/](http://www.omt.on.ca/), 613-754-5241), exploring the Bonnechere Caves ([www.bonnecherecaves.com/](http://www.bonnecherecaves.com/), 800-469-2283) and swimming at the Tooye Lake picnic area near Dacre. There is white-water rafting ([www.wildernesstours.com/](http://www.wildernesstours.com/) or [www.ottawaadventure.com/](http://www.ottawaadventure.com/)) on the Ottawa for the more adventurous. The Diefenbunker, Canada's Cold War Museum near the town of Carp, may also be of interest ([www.diefenbunker.ca/](http://www.diefenbunker.ca/)). Nearby Pakenham boasts the only five-arch stone bridge in North America (and has *Gomphus quadricolor* flying through the arches). For those wishing to visit Canada's capital before or after the meeting there is a great deal to do ([ottawakiosk.com/](http://ottawakiosk.com/)).