

# Williamsonia

## What's in a Name: When is an *Aeshna* not an *Aeshna*?

By Mark O'Brien

Many of the readers of *Williamsonia* will recall my previous writings on the use of "common" names versus the Latinized binomials that have long been in use. Some of these names, quite obviously, date from the time of Linnaeus. The system of binomial nomenclature defines not only a species, but its supposed relation to other entities. So, for example, although there are many dragonflies known as darners, that term encompasses an entire family, the Aeshnidae. Now, within the Aeshnidae, there are quite a few genera and many, many species. A Cyrano Darner, although an appropriate common name, does not tell us that it is in its own genus *Nasiaeschna*, not *Aeshna*. Likewise, the Swamp Darner, *Epiaeschna heros*, is not in the genus *Aeshna*. The mosaic darners, genus *Aeshna*, are what many people typically think of when the word darter comes to mind. The Spatterdock Darner, *Aeshna mutata*, is related to all the other members of the genus *Aeshna*. Or maybe not. The study of systematics seeks to find relationships among taxonomic units and to ferret out the evolutionary history of a group of animals. Not only how are they related, but from where did they evolve? What lineage produced a certain genus or group of closely-related species? In the past, this has not been exactly a precise science, but with modern tools, cladistic methodology, and plenty of specimens to work with, the science has become much more respectable.

Now, back to what I started this discussion about. There are twenty species of Aeshnidae in Michigan, in seven genera. The most speciose, the genus *Aeshna*, contains 12 species in Michigan. Well, not any more. Natalia Von Ellenrieder -- a talented and extremely hard-working Argentinian systematist -- had her paper about South American *Aeshna* published in 2003. What does a paper on non-North American mosaic darners have to do with all of this? Well, it turns out that Natalia's work on the genus *Aeshna* in South America has revealed that the genus *Aeshna* is not monophyletic. In other words, there are many branches in the family tree, and some nearby shrubs are not what they seem. In essence, there are several similar-looking (at

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The Spatterdock Darner, *Aeshna mutata*, is related to all the other members of the genus *Aeshna*. Or maybe not.

## Odes in Suriname

By Stephen Ross

I have had the good fortune to visit the little country of Suriname three times, the first two on Victor Emanuel Nature Tours (VENT, 2002 and 2003). On these two trips, I was in the drier portions of the country where dragonfly viewing was not the best, though there were a few.

However, in October 2003, I was invited to go along with one of the VENT guides on a two-man tour while he did some scouting for future

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Probable *Uracis infumata* in Suriname. Photo: Steve Ross

## What's in a Name: When is an *Aeshna* not an *Aeshna*? (cont.)

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first glance) groups of South American *Aeshna*-like species that do not share a common ancestor with the northern genus *Aeshna*. Her phylogenetic analyses have led her to recommend that the genus *Aeshna* be restricted to the Holarctic species, and that the Neotropical species of *Aeshna* be assigned to the genus *Rhionaeschna*. That means that two common North American species will be placed into the genus *Rhionaeschna* because of their relationship to the South American species. From here on, *Aeshna mutata* Hagen (Spatterdock Darner) and *Aeshna multicolor* Hagen will be known as *Rhionaeschna mutata* (Hagen) and *Rhionaeschna multicolor* (Hagen). These are known in the systematics literature as *new combinations*, meaning that they have been reassigned to a different genus. Although I am sure some will be puzzled over all this, and wish it would go away, I find it very exciting that we have in our midst a representative of a predominantly South American group of darners. Think about it -- the Spatterdock Darner has always been unusual compared to the other *Aeshna* species. It prefers well-vegetated fishless ponds (and these are often temporary), emerges quite early in the season (as early as mid-May in some years) its eyes are a cobalt blue (unlike other darners), its thoracic markings less defined than the other species, and does not get very far north in Michigan. So, without external evidence, I have always felt that *Aeshna mutata* stood out from

the other species in the genus. Now, with Natalia's analysis of the group, it is placed in a different genus, and probably quite correctly.

The generic name *Rhionaeschna* is used because Friedrich Förster first described a South American member of this group, and gave it the name *Rhionaeschna* (in 1909). *Rhion* apparently comes from the Greek meaning "headland" or jutting mountain peak, which makes sense for many of these species, as they come from montane regions. *R. mutata* is closely related to 3 other species, including the western *R. multicolor*. The other two species are found in the SW USA, Mexico and Central America.

So, after all of this, what do we do about it? We simply use the new name in our literature, checklists, and so on. It's still the Spatterdock Darner for those of you that are worried about common names, and *Rhionaeschna mutata* rolls off the tongue pretty easily, too. Now we have eight genera of Aeshnidae in Michigan, by the way...

### Literature Cited

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## Review: *A Field Guide to the Dragonflies and Damselflies of Massachusetts*

By Julie Craves

*A Field Guide to the Dragonflies and Damselflies of Massachusetts* by Blair Nikula, Jennifer L. Loose, and Matthew R. Burne. 2003. Massachusetts Division of Fisheries and Wildlife.

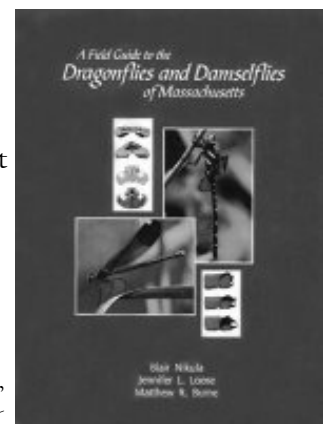
Sid Dunkle's *Dragonflies Through Binoculars* spawned a popular interest in odonata that has resulted in the publication of a spate of state odonata field guides, including several from the neighboring states of Ohio and Wisconsin. Though not close by, Massachusetts shares many of Michigan's odonata, so *A Field Guide to the Dragonflies and Damselflies of Massachusetts* is of interest to state dragonfly aficionados.

This guide covers all 166 species from Massachusetts with full color photographs. I'm unconvinced that photographs are the best way to illustrate an odonata field guide. Although these photos are mostly high quality, there are no arrows pointing out important field marks. The guide gets high marks for showing both sexes of most species. This is especially helpful

for damselflies, and it is the first field guide to cover females thoroughly. Burne did a stunning job illustrating the male terminal appendages of the spreadwings (*Lestes*) and pond damsels (*Enallagma*, *Coenagion*, *Chromagrion*, *Ischnura*, and *Argia*), the thoracic patterns of the mosaic darners (*Aeshna*) including the pattern on abdominal segment 2, the terminal appendages of male pond clubtails and snaketails (*Gomphus*, *Ariogomphus* and *Ophiogomphus*) and emeralds (*Somatochlora*). They should have let him illustrate each species!

The species accounts are adequate, but somewhat disappointing. Length for each species is not given. Instead, each account includes a black bar representing the length. Others

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## Odes in Suriname (cont.)

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trips. This is the way to travel, just the two of us, changing plans whenever we needed and going off at the spur of the moment without waiting for anyone else (plus the lack of whiners, motor-mouths, snorers, and other annoyances). At the time of year of this trip it is the dry season. I really didn't expect to see much in dragonflies, but was pleasantly surprised.

I'll start with the Suriname River part of the trip. It was our objective to hire a boat and travel some 30 or so kilometers up river, looking for birding sites. The river is one of five large rivers in Suriname, is about 0.5 to 0.75 km wide, and empties from the central Guyanan shield of the country at the port and capitol of Paramaribo. Paramaribo is not a particularly pretty place, but it is a fascinating mix of South-Asian, Dutch, Indonesian, African, Chinese, Hindu, Islamic, and Jewish cultures. After major motor trouble with the boat, which necessitated waiting over an hour in the predawn grit and flotsam (both on the water and of humanity), and getting a knife pulled on my traveling partner, David, plus a Rastafari proudly exhibiting himself to the passing women, we got going.

After several hot hours in the tropical sun running up channels looking for birds, we pulled off at one site along the bank and just took a look around (and do what needed to be done). The only damselfly (*Mecistogaster*?) I saw here, and a very uncooperative one at that, appeared conservatively five inches long. Unfortunately, this one offered only a few good looks at close range, but was not having anything to do with being photographed before disappearing into the vine tangles after a modest chase. With snakes being a common worry, I did not follow it. Over the river, there were a number of Anisoptera spe-

cies, a few of which that, had I had a long net, I might have been able capture. Most prominent was likely the Seaside Dragonlet (*Erythrodiplax berenice*), quite common along the coasts and estuaries in the Caribbean.

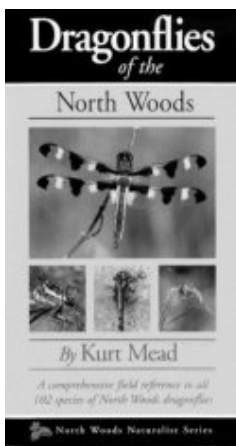
Preceding this trip, we had spent several days in the central part of the southeast section of the country. Palemeu will not appear on your atlas, but you might be able to find the joining of the Palemeu and Tapanahony Rivers on a good one. While not great for dragonflies either, it was the best place I have found in Suriname. The rivers of Suriname are quite sterile, being "black-water" rivers due to the high amount of tannins. The rivers are indeed coffee-black. Also, not conducive to dragonflies in these rivers is that the fish are mostly piranhas. However, there were about eight dragonfly species that hovered around the boat. I have never seen an Anisoptera in the woodlands of Suriname, which are presumably too dark. However, an occasional damsel is found along the trails in sunny spots.

One finds few ponds and pools in the "jungle" as the soils in the woodlands are thin. The take-up of water is rapid, either when scarce in the dry season or as runoff in the rainy season. We did, however, find one birding location near the Palemeu airstrip that had a substantial drying swamp, around which were a number of bright red *Orthemis* (?) dragonflies. These were quite accommodating for pictures, much like our *Erythemis*. I just stuck a stick at the edge of the pond and within two minutes, one took up a post at the tip.

All in all, I wouldn't go to Suriname for dragonflies. The attraction is certainly the birding, which is quite good, but dragonflies do make for a worthwhile diversion.

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## Review: *Dragonflies of the North Woods*



By Mark O'Brien

Over the past four years, we have been seeing an abundance of books on Odonata, and the newest guide is an exciting and very useful addition to the literature. *Dragonflies of the Northwoods* by Kurt Mead, is the guide to the dragonflies of northern Minnesota, Wisconsin, Michigan and the adjacent region of Ontario. It is well-illustrated with photographs of each species and often includes additional closeups of pertinent morphological features. The sections on adult morphology and biology are excellent, with very good illustrations. The descriptive text for each of the 102 species includes information on habitats, behavioral information, similar species, and often there is a sidebar with interesting notes ("Nature Notes") about a species. The main photograph for a species shows a good lateral view, and a simple graphic accompanying the photo shows the adult flight period, relative abundance, and a size bar. A habitat synopsis below the main photo provides everything you need for quickly looking up information. The book also has a nice section on observing, collecting, and photographing these interesting insects.

Appendices in the back of the book show phenology of all the species at a glance, a checklist, a list of Odonata groups and websites, and a list of binoculars suitable for dragonfly work. A glossary and an index greatly aid the less famil-

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## Review: *A Field Guide to the Dragonflies and Damselflies of Massachusetts* (cont.)

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may find this easier to assimilate, but I find it frustrating. Descriptions appear thorough, but do not always emphasize key identification features; putting them in bold would have been helpful. Although it is evident in the photo, no mention is made of the yellow wing tips on Slender Spreadwings (*Lestes rectangularis*), which I find to be a handy field mark. Additional information is given for range (overall) and status (in Massachusetts), habitat, and notes. Flight period graphics for each species are pretty general.

Notes are of mixed utility. For example, each spreadwing account repeats the same sentence on perching posture, which seems redundant especially considering it is included in the introductory material on the family. (The introductions to each family are good, giving information on basic structure and habits.) On the other hand, information on which species are tolerant of degraded habitats is very useful. Some statements I wonder about. The guide states that Swamp Darner (*Epiaschna heros*) males do not patrol at breeding sites, but I have watched them do so in Kentucky. The lack of robust notes is probably not so much the fault of the authors as the relative paucity of detailed knowledge of the ecology of many odonata species.

This guide is more field-friendly than the currently available regional guides. *The Color Guide to Common Dragonflies of Wisconsin* (K. Legler, D. Legler, D. Westover, 1998) is a bulky, 6.75 x 8.5 inch stapled paper. *Dragonflies and Damselflies of Northeast Ohio* is spiral bound and reasonably-sized (5.75 x 8.5), but the paper pages get pretty battered in my pack. My favorite, the *Dragonflies and Damselflies of Ohio* (R. Glotzhober and D. McShaffrey, 2002) with its excellent keys is an 8.5 x 11 inch behemoth that stays in the car. The Massachusetts guide is 6.25 x 8, spiral bound, with a fairly sturdy, glossy, cover. Pages are also glossy paper, perhaps not rugged but maybe a little more water resistant for pondside perusals.

Overall, this is a nice field guide. At this point in the relatively young "hobby" of dragonflying, we can all benefit from having as many field guides as possible. I know ANY competent guide to damselflies is a welcome addition to my library. This guide is available for \$20.00 (a great price for a full-color guide) from: Massachusetts Natural Heritage Program, 1 Rabbit Hill Road Westborough, MA 01581.

## *Dragonflies of the North Woods* (cont.)

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iar, too. This is the dragonfly book that the Great lakes region has waited for, and I commend the author on the thoroughness and utility of his effort. Whether you are a dedicated Odonatologist, casual observer, or just beginning, this book belongs in your back pocket. Yes, it is sized appropriately to fit in a pocket so that you can take it in the field with you. After all, this IS a field guide, and I think you will soon find that it becomes a travelling companion on your next field trip. You better buy two, because inevitably, one will either get "borrowed" or it will end up a victim of a fall into a bog or stream.

I really cannot find any fault with this book. The photos are good for identification, the text is concise, accurate and informative, and the layout and printing are excellent. Kurt has obviously put some thought into what makes a good guide, and has probably incorporated all of our gripes about the other guides (or lack thereof) to produce a well-done field guide that sets the bar. I know some may gripe about the lack of larval information, but 95% of the people buying this book are interested only in the flying adults. I think *Dragonflies of the North Woods* will be THE dragonfly field guide for the Great Lakes region in the coming years.



Mocha Emerald (*Somatochlora linearis*), Louisville, KY, 28 July 2002. Photo by Julie Craves.

## Recent Literature

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- Cordoba-Aguilar, A., J. C. Salamanca-Ocana, and M. Lopezaraiza. 2003. **Female reproductive decisions and parasite burden in a calopteryid damselfly (Insecta: Odonata).** *Animal Behaviour* 66: 81-87. – Study in Spain demonstrated that female *Calopteryx haemorrhoidalis* with more intestinal parasites (as indicated by a negative correlation with wing pigmentation) had lower reproductive success.
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- Freeland, J. R., M. May R. Lodge, and K. F. Conrad. 2003. **Genetic diversity and widespread haplotypes in a migratory dragonfly, the common green darner *Anax junius*.** *Ecological Entomology* 28: 413-421. – Found a relatively high genetic diversity for a migratory species, suggesting adaptability to a range of environmental conditions.
- Huang, D., A. Nel, and Q. Lin. 2003. **A new genus and species of aeshnopteran dragonfly from the Lower Cretaceous of China.** *Cretaceous Research* 24: 141-147. – A fossil dragonfly named *Parapetala liaoningensis* is discovered in China.
- Kauppinen, J. and J. Mappes. 2003. **Why are wasps so intimidating: field experiments on hunting dragonflies (Odonata: *Aeshna grandis*).** *Animal Behaviour* 66:505-511. – The dragonfly Brown Hawker avoids preying on insects that are striped black-and-yellow and shaped like wasps.
- Johansson, F. 2003. **Latitudinal shifts in body size of *Enallagma cyathigerum* (Odonata).** *Jrl. Biogeography* 30: 29-34. – Samples of Northern Bluet/Common Blue Damselfly across Europe showed a pattern of larger body size at low and high latitudes, and smaller body size at intermediate latitudes.
- Jordan, S., C. Simon, and D. Polhemus. 2003. **Molecular systematics and adaptive radiation of Hawaii's endemic damselfly genus *Megalagrion* (Odonata: Coenagrionidae).** *Systematic Biology* 52:89-109.
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- Petrulevicius, J. F. and A. Nel. 2003. **Oldest petalurid dragonfly (Insecta: Odonata): a Lower Cretaceous specimen from Patagonia, Argentina.** *Cretaceous Research* 24: 31-34. – The first fossil petalurid dragonfly from Argentina, *Argentinopetala archangelskyi*, is described.
- Petrulevicius, J. F. and A. Nel. 2003. **A new libelluloid dragonfly (Insecta: Odonata: Italoansida) from the late Paleocene of Argentina.** *Geobios* 36: 401-406. – Describes a new genus and species, *Austrolibellula noroestenia*, from northwestern Argentina.
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- Samways, M. J. 2003. **Threats to the tropical island dragonfly fauna (Odonata) of Mayotte, Comoro archipelago.** *Biodiversity and Conservation* 12: 1785-1792. – Discusses the human treats to the dragonfly diversity of this island, in particular the heavy use of detergents in streams.
- Schindler, M., C. Fesi, and A. Chovanec. 2003. **Dragonfly associations (Insecta: Odonata) in relation to habitat variables: multivariate approach.** *Hydrobiologia* 497:169-180. – Statistical examination of relationship between dragonfly assemblages and environmental variables in Austria.
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- Sukhacheva, G. A., N. A. Kryukova, and V. V. Glupov. 2003. **On the roles of morphological and biochemical criteria in species identification: an example of dragonfly larvae of the genus *Aeshna*.** *Biol. Bull. Russian Acad. Sci.* 30: 63-68. – Describes the difficulty in using structural characteristics and the helpfulness of using species-specific proteins to identify early-instar larvae.

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## Odonata resources on the Internet

Two excellent odonata bibliographies are available on the Internet.

<<http://www.bechly.de/sgpspo.htm>> An archive of 1,300 odonata papers and other literature from 1990-1996

<<http://www.windsofkansas.com/odbib.html>> An exhaustive compilation from many odonata journals categorized by subject and geographically.

Web sites of regional interest:

Ohio Odonata Society <<http://mcnet.marietta.edu/~odonata/index.html>>

**Ontario Odonata** <<http://www.netcore.ca/~prairie/odonata.html>>

Our very own **Michigan Odonata Survey** <<http://insects.ummz.lsa.umich.edu/MICHODO/MOS.HTML>>

Also worth a look:

**Ode News** <<http://www.odenews.net/>>

**Digital Dragonflies** <<http://www.dragonflies.org/catalog.htm>>