

Royal Botanical Gardens Odonate Count 2003

by Carl Rothfels

On July 25, Royal Botanical Gardens (RBG) staff held a trial count of the dragonflies and damselflies (Odonata) of RBG properties. The count was set up in a similar fashion to the popular Christmas Bird Counts and the increasingly popular butterfly counts that now occur across much of Ontario.

Odonate counts are annually increasing in number; to my knowledge, there were four other odonate counts held in 2003: the Algonquin Park West Side Count; the Lake Dore Count; the Pelee Island Count; and the Carden Plains Count (King et al., 2003). Of these, only the Pelee Island count is in the Carolinian Zone, and none are in the northern Carolinian Zone area of Hamilton.

A count at Royal Botanical Gardens, then, has the potential to fill in a gap in the study of Odonata. Aside from its cultivated gardens, RBG has approximately 970 hectares of natural lands, consisting of four loosely connected sanctuaries boasting diverse ecological communities: Cootes Paradise, Hendrie Valley, Rock Chapel, and the Berry Tract (Smith, in press). Cootes (a coastal marsh where Spencer Creek flows into Hamilton Harbour), and Hendrie Valley (where Grindstone Creek enters the harbour) contain particularly rich wetland habitats, and that is where we concentrated our odonate counting.

I also hoped that by holding a count, we could learn more about the Odonata of RBG, and could increase the number of people interested in this fascinating group of insects. Encouraged by the success of this count, I plan on making it an annual event, and on holding an additional Hamilton Odonate count next year.

Dragonflies and damselflies make an excellent count group since, like birds and butterflies, they are conspicuous animals that can generally be identified with a pair of binoculars (with the need to catch some species for closer examination in order to confirm their identity). They are diverse but not to the extent of being overwhelming, and they are excellent indicators of ecological conditions. Odonata are dependent on aquatic environments for their larval stage, which makes them excellent indicators of water quality, an issue of significant interest at RBG and across the Hamilton Harbour area as we attempt to restore the Harbour environment.

The count was informal; it ended up being half “count” and half “tutorial.” We spent the morning at the western end of Cootes Paradise exploring the edges of the Desjardins Canal and Spencer Creek and trekking through the European Manna Grass (*Glyceria maxima*) wet meadow communities. For the afternoon we hiked along the Grindstone Creek through Hendrie Valley. This area features frequent

shallow-water “marshes” that have been isolated from the Creek by berms made of Christmas trees embedded in the soil sediment. These barriers keep Eurasian Carp out of the marshes and allow aquatic vegetation to regenerate. These marshes were particularly rich in Odonata. To end the count, we made a quick trip, in declining light, down to Mercer’s Glen to pick up the last species of the day.

The count was a great success. We found 556 individuals of 28 species. The most common species of damselfly was the beautiful Ebony Jewelwing (*Calopteryx maculata*), with 82 individuals observed. They were particularly abundant along Spencer Creek, along with the most abundant dragonflies—the meadowhawks. Many meadowhawks are difficult to identify to species, especially when they are young, so most of ours are listed as *Sympetrum* sp., which means that we know they were a meadowhawk, but we’re not quite sure which one.

Everyone involved had an excellent time, and was able to learn a great deal about odonate identification and ecology (and improve their skills with an insect net, too!). If anyone thinks that catching dragonflies (or even damselflies) is easy, we invite you to come out on the count next year!



Highlights: The Halloween Pennants (*Celithemis eponina*) seen over Blackbird Marsh were new for RBG. These fast-flying dragonflies with orange and red striped wings often fly low over ponds and can be extremely difficult to catch. Fortunately, they are stunningly coloured, and easy to identify from a distance. Also, the Cherry-faced Meadowhawks (*Sympetrum internum*) were new for RBG, and also new for Hamilton (OOD 2003) (see note for further details). This species poses an identification challenge (it resembles the common Ruby Meadowhawk [S.

rubicundulum]), and so it may have been overlooked in the past. Damselflies also delivered excitement. We found three locations for the Blue-fronted Dancer (*Argia apicalis*), a southern species of blue and black damselfly that had been found new for RBG and Hamilton (OOD 2003) the day before at Long Pond. This species was somehow missed last year, but appears to be widespread in the RBG area. Two of the locations are within Halton, and represent the first records of this species in that region (OOD 2003). Another exciting damselfly was the Rainbow Bluet (*Enallagma antennatum*), which manages to pack black, orange, yellow, green, and blue onto its tiny body. A population on Spencer Creek at Cootes Drive is the first RBG population and the second RBG record of this species (the first record being a lone individual found resting on foliage near the Cootes Paradise Fishway). Finally, several Band-winged Meadowhawks (*Sympetrum semicinctum*) at the mouth of Grindstone creek were the second RBG record of this distinctive small meadowhawk.

“Count Week” species: We only had one party in the field, which, coupled with our relaxed pace, meant that we were only able to cover a small area (see attached maps), and only by foot (no canoes). Other species seen in the search areas within three days either side of the count include Skimming Bluets (*Enallagma geminatum*), Unicorn Clubtails (*Arigomphus villosipes*) and one Prince Basket-tail (*Epiptera princeps*). A more thorough count is sure to find more species, and many more individuals.

Weather: Conditions were great for counting odonates, with the day being hot and sunny, with a slight breeze.

Participants: Jeremy Adams, Hollie Clavering, Tiffany Harvey, Gordon Lewer, Brian Pomfret, Carl Rothfels, Sean Spisani, Jen Sylvester, and Kiirsten VanWyck. Special thanks to everyone for making this count such a success, and so much fun.

Party hours: Four kilometres walked, over six hours.

Note: *Sympetrum rubicundulum* and *Sympetrum internum* were not conclusively identified in the field. The critters we called “pale-faced Sympetrum” and “red-faced Sympetrum” during the count were attributed to these species, respectively, after the fact, based on close examination of *Sympetrum* specimens from RBG and elsewhere in Hamilton and Haldimond/Norfolk. *Sympetrum*s with red-faces seem to consistently be *S. internum*, and those with off-coloured faces *S. rubicundulum*, but my sample size is small, and some of the individuals placed in these species on the count may belong to other species.

Request for sightings: I am very interested in the Odonata of Hamilton and Halton regions. If anyone has any sightings, please let me know. I can be reached at RBG by phone at 905-527-1158, ext. 238 or by email at crothfels@rbg.ca.

Citations:

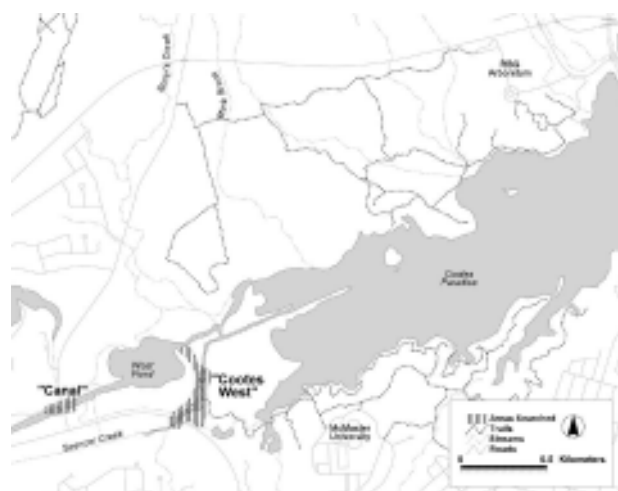
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Ontario Odonata Database (OOD). 2003. Database of Ontario Odonata records on file at the Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough.

Smith, T. In press. Flora of Royal Botanical Gardens. Royal Botanical Gardens, Burlington, Ontario.



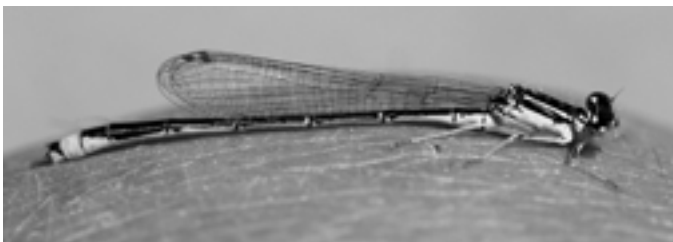
Cootes Paradise



Hendrie Valley

RGB Odonate Count 2003

Scientific Name	Common Name	Numbers
Damselflies		
<i>Calopteryx maculata</i>	Ebony Jewelwing	86
<i>Lestes dryas</i>	Emerald Spreadwing	1
<i>Lestes rectangularis</i>	Slender Spreadwing	20
<i>Lestes unguiculatus</i>	Lyre-tipped Spreadwing	2
<i>Amphagrion saucium</i>	Eastern Red Damsel	7
<i>Argia apicalis</i>	Blue-fronted Dancer	11
<i>Argia fumipennis</i>	Variable Dancer	1
<i>Enallagma antennatum</i>	Rainbow Bluet	5
<i>Enallagma ebrium</i>	Marsh Bluet	3
<i>Enallagma exsulans</i>	Stream Bluet	34
<i>Enallagma civile</i>	Familiar Bluet	5
<i>Enallagma signatum</i>	Orange Bluet	11
<i>Ischnura verticalis</i>	Eastern Forktail	6
Dragonflies		
<i>Aeshna constricta</i>	Lance-tipped Darner	1
<i>Anax junius</i>	Common Green Darner	3
<i>Celithemis eponina</i>	Halloween Pennant	3
<i>Erythemis simplicicollis</i>	Eastern Pondhawk	7
<i>Leucorrhinia intacta</i>	Dot-tailed Whiteface	2
<i>Libellula luctuosa</i>	Widow Skimmer	9
<i>Libellula pulchella</i>	Twelve-spotted Skimmer	15
<i>Libellula lydia</i>	Common Whitetail	29
<i>Pachydiplax longipennis</i>	Blue Dasher	39
<i>Perithemis tenera</i>	Eastern Amberwing	20
<i>Sympetrum cf internum*</i>	Cherry-faced Meadowhawk	7
<i>Sympetrum obtrusum</i>	White-faced Meadowhawk	21
<i>Sympetrum cf rubicundulum*</i>	Ruby Meadowhawk	11
<i>Sympetrum semicinctum</i>	Band-winged Meadowhawk	2
<i>Tramea lacerata</i>	Black Saddlebags	4
<i>Sympetrum</i> sp.	Meadowhawk species	153
<i>Lestes</i> sp.	Spreadwing species	20
<i>Argia</i> sp.	Dancer species	3
<i>Enallagma</i> sp.	Bluet species	15
TOTAL NUMBERS:		556



Rainbow bluet - Eels Creek - Michael van der Poorten

Moth Lore

.....Richard Rowe mentioned the Norse colonists of Greenland, and how climate change destroyed their once-lovely home. I thought you folks might be interested in an alternative, entomological explanation—the moth that ate Greenland. The noctuid moth *Eurois occulta* (L.), probably played a major role here. I read about it in Louis Hanfield’s book “Les Guide des Papillons du QuÉbec.” (Version scientifique. Broquet Inc., Ottawa. p. 756). In short, he argues that the Vikings accidentally introduced the moth, and that the caterpillars became super abundant and ate every green leaf in sight. In support of this, there are reports of caterpillars so thick on the rocks by the sea that kayaks could not be landed due to the slipperiness of their collective squished bodies. As well, there are layers in Greenland peat bogs made up of almost nothing but the remains of Eurois pupae. Interesting, no?

When I was a student, I had the good fortune to take a course in Quaternary environments. I think that was in 1985. Back then, no one had heard of global warming. I was taught that the first half of the 20th century was the warmest period in the last 1000 years, and that the climate was cooling at the time I took the course. I was also taught that the “little ice age” and the “hypsihermal” warm period were both slippery concepts, and that the evidence from one site rarely corresponded with that from another. The take home message seemed to be that climates change a LOT, and that there is no such thing as normal. When the global warming debate started up, I got the impression that climatologists broke into two camps— those who looked at evidence from the past and tried to correlate it with predictive models (such as the Milankovitch curves [hope I spelled that correctly]) and those who used computer models and recent weather data to predict the future. Whether these two groups have come together to share their perspectives in the last 15 years, I have no idea, but surely there is much here that we should understand before trusting claims about odonate ranges and global warming.

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