

## A New Species of Mantidfly (Mantispidae) for the Kingston Region

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Editors note: This article is a modified version of the web log published on 1 August 2014 at the Nomadic Naturalist (<http://mikeburrell.blogspot.ca/>) by the author.

On 27 July 2014 I encountered a small, plain-coloured Mantidfly (Order: Neuroptera; Family: Mantispidae) on a white cotton sheet that I had placed below a black light. The black light had been on the entire night previously for the purpose of attracting nocturnal moths. Having only seen a couple of Mantidflies before, I carefully moved the specimen to some vegetation where I took several photos and a video recording of it.



**Figure 1: *Dicromantispa sayi* at Ida Hill, Frontenac on 27 July 2014. Note the unpatterned wings and smooth pronotum**



**Figure 2: Close-up of *Dicromantispa sayi* at Ida Hill, Frontenac on 27 July 2014. Note the smooth pronotum.**

As you can tell, I was pretty excited to find this Mantidfly. In my experience they are a rarely seen insect, but very interesting to see. Not only are they bizarre-looking and generally rare or uncommon, they've got a pretty interesting life history as well. I didn't know much about them before so did some research and came across an excellent paper by Rob and Syd Cannings (Cannings and Cannings 2006). The information presented here is gathered from this paper.

Like many insects, Mantidflies are at the northern edge of their range in Canada with only four species in all of the country (all of which are found in Ontario). Only one species, *Climaciella brunnea* (the "Wasp Mantidfly"), is relatively widespread. The Wasp Mantidfly is, you guessed it, a wasp

mimic and is the only species I had seen (twice) before in Ontario: one at Deloro, Hastings County on 15 June 2008 and another at Backus Woods, Norfolk County on 3 July 2010 (Figure 3).



**Figure 3. Wasp Mantidfly at Backus Woods, Norfolk on 3 July 2010**

The Wasp Mantidfly is not only the most widespread species but the easiest to identify. It's fairly large and its body is striped brown and yellow similar to that of many species of wasp. The other three Canadian species look different from the Wasp Mantidfly but are quite similar to each other and require very good photos, preferably showing close-ups of the pronotum and the wings. This observation is clearly one of the remaining three species. On figure 2, the pronotum is visibly smooth (lacks "numerous short setae over its entire length") which means it is one of the two *Dicromantispa* species. The separation of those two species is done by the presence/absence of dark spots on the "wing tips and some cross veins of radial cells", which this specimen lacks. That puts the identification as *Dicromantispa sayi*. This is exciting because, according to the paper referenced above, this would be a (known) range extension for the species in Ontario, which, based on examined

specimens, was restricted to the north shore of Lake Erie. Rob Cannings (pers. comm.) advised that there was a recent (2013) record from near Tweed, Hastings County, so this recent record is not entirely unexpected.

As mentioned earlier, Mantidflies have a fascinating life history. Their raptorial forearms give them away as predators as adults (feeding on a variety of other insects). As larvae, most develop in spider egg sacs where they feed busily on the individual spider eggs. In some species the larvae actively search out spider eggs sacs, but in others they board adult spiders and enter the egg sac during the construction phase. The eggs are stalked, similar to these Green Lacewing (*Chrysopidae*) eggs (Figure 4)



**Figure 4: Green Lacewing eggs at Heidelberg, Regional Municipality of Waterloo, 12 August 2005**

#### References:

Cannings, R.A. and S.G. Cannings. 2006. The Mantispidae (Insecta: Neuroptera) of Canada, with notes on morphology, ecology, and distribution. *Canadian Entomologist* 138: 531-544.

Bug guide Mantidfly (Mantispidae) page: <http://bugguide.net/node/view/4796>