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MODIFICATION OF HOST-SEEKING BEHAVIOR IN PARASITIZED *CULEX TERRITANS*

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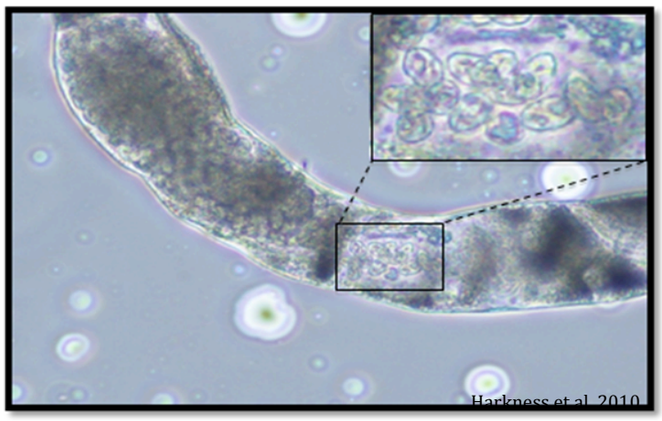
Animals infected with parasites often display abnormal behaviour that may be a product of the influence of the parasite over the host. Modifying host behaviour may benefit the parasite by increasing transmission success, which can be accomplished in several ways. Trophically transmitted parasites, which are those that are passed from host to host via ingestion, may benefit from reducing host activity during parasite development so as to avoid being consumed prematurely. Conversely, it may be beneficial for the parasite to induce an increase in host activity to attract predators once the parasite has matured and reached a transmissible stage. *Hepatozoon clamatae* is a trophically transmitted, apicomplexan blood parasite that passes between the definitive host, the mosquito, *Culex territans*, and the intermediate host, the green frog, *Rana clamitans*. The parasite requires 30 days to mature within the Malpighian tubules of the mosquito host, after which the parasite is transmitted when a frog eats the infected mosquito. We tested whether, during development, *H. clamatae* inhibits mosquito host-seeking behaviour, presumably so that mosquitoes avoid being eaten before parasites are mature. We also tested whether, once the parasite has matured, *H. clamatae* modifies the host-seeking behaviour of the mosquito, presumably so that infected mosquitoes become more conspicuous to the frog. Observations of the behaviour of infected mosquitoes in the presence of uninfected green frogs during parasite development and at parasite maturity suggest parasite manipulation of behaviour is not occurring. However, inhibition of host-seeking behaviour due to egg retention in both infected and uninfected mosquitoes may not allow a true interpretation of this host-parasite relationship.



Laura Ferguson graduated from Sir John A. Macdonald High School, Hubley, Nova Scotia, in 2005. After testing the waters in Theatre and English, she settled into the Biology degree at Acadia University. Aside from academics, Laura has spent four years as a Resident Assistant at Acadia, playing an active role in the residence student body. She is currently completing her Honours thesis in Biology and is set to graduate in May 2010. She will be returning to Acadia University to complete her Master's degree in Biology with a focus in parasitology, entomology and animal behaviour. She plans to complete a PhD in Biology and pursue a career in research and teaching.