EFFECTS OF SUBZERO TEMPERATURES ON *HEPATOOZOO* SPECIES (PHYLUM APICOMPLEXA) IN THE FREEZE-TOLERANT WOOD FROG, *RANA SYLVATICA*

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*Hepatozoon clamatae* and *Hepatozoon catesbiana* are malaria-like parasites that infect the erythrocytes of frogs in eastern Canada. Although green frogs (*Rana clamitans*) and bullfrogs (*Rana catesbeiana*) are commonly infected with *Hepatozoon* species, these parasites have a low prevalence and parasitaemia in wood frogs, *Rana sylvatica*. The ability of wood frogs to freeze during the winter may account for these observations, as it is currently not known whether or not these blood parasites can survive sub-zero temperatures. The objectives of this study were first to determine the host specificity of the two *Hepatozoon* species for wood frogs, and second, to observe the effects of freezing on these parasites. Egg masses and adult frogs were collected during spring breeding. Blood smears revealed that four of 24 adults were infected with *H. catesbiana*. After metamorphosis, 21 metamorphs were fed mosquitoes with mixed infections of *H. clamatae* and *H. catesbiana*. Eight of these frogs were positive for *H. catesbiana*, and two of these eight were additionally infected with very low levels of *H. clamatae*. Four infected metamorphs and two infected adults were acclimated at 4°C for 4 wk, after which they were frozen at -3°C for 2 d. Four infected metamorphs and two infected adults were not frozen and served as controls. In both frozen adults and metamorphs, parasitaemia dropped considerably relative to the controls. This study suggests that wood frogs are suitable hosts for *H. catesbiana*, but likely not for *H. clamatae*, and based on preliminary data, that freezing reduces the parasitaemia of *Hepatozoon* species in wood frogs, which may account for low prevalence and parasitaemia values from literature.

**Chelsea Hammer** graduated from Prince Andrew High School in Dartmouth, Nova Scotia in 2008. She is currently completing her undergraduate degree in Honours in Biology and will graduate in May 2012. In 2011 Chelsea was awarded an NSERC undergraduate research grant to fund her thesis research. She presented her research at the Atlantic Canadian Association of Parasitologists (ACAP) meeting in 2011, and will present at the Canadian Society of Zoologists (CSZ) meeting in May 2012. During her time at Acadia, Chelsea has been a S.M.I.L.E (Sensory Motor Instructional Leadership Experience) volunteer and president of the Biology Society. Next year Chelsea hopes to pursue a degree in medicine at Dalhousie University, and eventually would like to establish a career in pediatrics.