

Parasitism in Dragonfly Nymphs (Order: Odonata, Family: Macromiidae) from Three Wisconsin Lakes

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NOTE: This is work conducted in conjunction with a larger study being carried out by Ken Tennessen, William Smith, Dennis Johnson & Marla Garrison based upon the discovery by Ken Tennessen & William Smith of a novel nematode parasite in *Macromia* nymphs in 2013.

Meet The Hosts

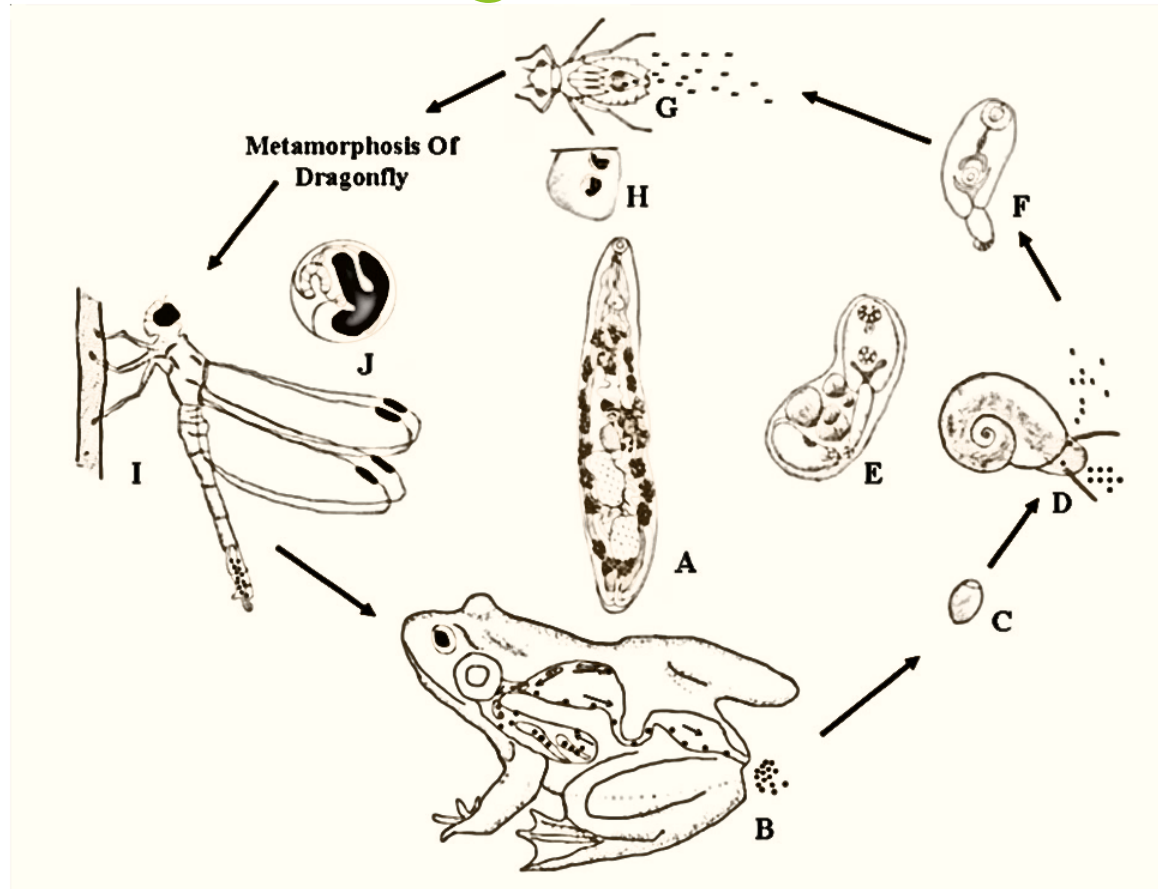
Macromia illinoiensis



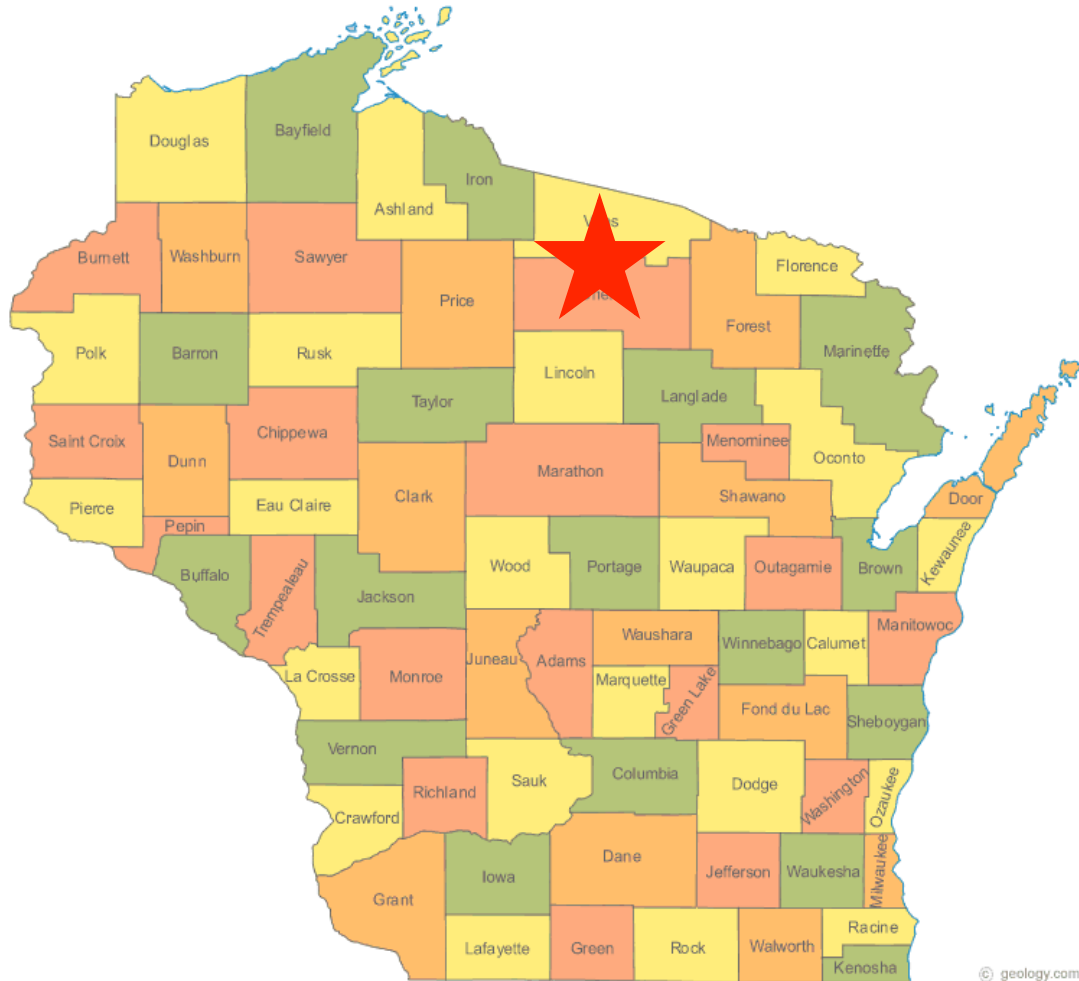
Didymops tranversa



Example of a Life Cycle of a Trematode Lung Fluke



The purpose of this study was to determine both the nematode and trematode parasitism rates for macromiid nymphs collected from three northern Wisconsin Lakes-Sparkling Lake, Tomahawk Lake and Clear Lake

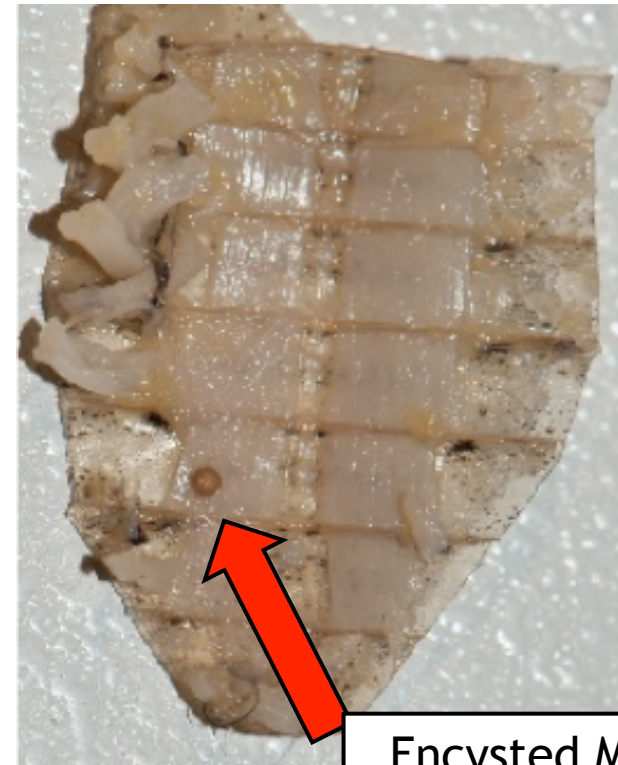


Dissected Hemocoeles of *M. illinoensis* Nymphs

Hemocoele of Uninfected vs.
Nematode Infected *M.*
illinoensis nymph



Hemocoele of Trematode
infected *M. illinoensis*
nymph



Encysted Metacercaria

Results

- ▶ Nematode Infection Rates:
 - ▶ Tomahawk Lake: 0.9%
 - ▶ Clear Lake: 0%
 - ▶ Sparkling Lake: 0%
- ▶ Trematode Infection Rates:
 - ▶ Tomahawk Lake: 76.3%
 - ▶ Clear Lake: 32.1%
 - ▶ Sparkling Lake: 9.0%

Discussion

- ▶ Nematode parasitism was non-existent in two lakes and low in the third. This life cycle and parasite have yet to be identified and my data is being incorporated into a much larger study
- ▶ Trematode infection was widely variable between lakes
- ▶ Trematode load appeared to be heaviest in later season samples and in later stadia nymphs

Future Studies

- ▶ Dissect adults to look for trematodes
- ▶ Identify the intermediate hosts in the lakes
- ▶ Identify the species of trematode(s) and is it indigenous or invasive?
- ▶ Consider the seasonality of infection
- ▶ The effect of parasitism on the population of these species of dragonflies

Questions???