

## AN ABSTRACT OF A THESIS

HOST FISHES OF FOUR SPECIES OF FRESHWATER MUSSELS,  
AND DEVELOPMENT OF AN IMMUNE RESPONSE

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Host fishes were identified for *Medionidus conradicus*, *Lasmigona costata*, *Elliptio dilatata*, and *Ptychobranchnus subtentum*. Twenty fish species representing seven families were infected with glochidia in the laboratory to enable positive identification of host species. Transformation periods varied among species and ranged from 10-40 days. *Medionidus conradicus* transformed on rainbow darters (*Etheostoma caeruleum*) and striped darters (*E. virgatum*). Hosts identified for *P. subtentum* were rainbow darters, redline darters (*E. rufilineatum*), fantail darters (*E. flabellare*), barcheck darters (*E. obeyense*), and banded sculpin (*Cottus carolinae*). *Lasmigona costata* glochidia metamorphosed on 11 fish species. Few glochidia of *E. dilatata* were available for infecting fish, but metamorphosis occurred on rainbow darters, banded sculpins, and rockbass (*Ambloplites rupestris*).

To determine if fish developed immunity to glochidia, six redline darters and seven rainbow darters were subjected to three infections of glochidia of *M. conradicus*. Metamorphosis occurred on 100% of the rainbow darters during the first two infections but declined to 83% in the third infection. Although transformation occurred on 100% of redline darters after the first infection, metamorphosis occurred on 83% of the fish after the second infection and on only 50% of the fish after the third infection.