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MYSIS RELICTA AS INTERMEDIATE HOST OF AN ACANTHOCEPHALAN PARASITE

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ABSTRACT

A cystacanth (Acanthocephala: Echinorhynchidae) was found in each of two specimens of *Mysis relicta* collected from Green Lake, Green Lake County, Wisconsin. The occurrence of the acanthocephalans in *Mysis* and the ability of *Mysis* to act as an intermediate host for other fish parasites should result in caution in any attempts to transplant *Mysis* into lakes in order to enhance their fisheries potential.

INTRODUCTION

Brownell (1970) studied the possibility that *Mysis relicta* (Loven) and *Pontoporeia affinis* (Lindstrom) could serve as intermediate hosts of the acanthocephalan *Echinorhynchus salmonis* Muller. Based upon feeding experiments, it was found that *Pontoporeia* definitely was an intermediate host, but that no infections occurred due to the feeding on *Mysis* by the lake trout. It was therefore considered that *Mysis relicta* would be a good organism to transplant into lakes where incomplete food chains occurred in order to enhance the fisheries potential of these lakes.

The lack of acanthocephalan parasites in *Mysis* was confirmed for southwestern Lake Michigan by Amin (1978) in studying the occurrence of acanthocephalan cystacanths in *Mysis* and *Pontoporeia*. In the dissection of 2,161 specimens of *Mysis*, Amin (1978) did not find any cystacanths, though he did find one cestode proceroid, *Cyathocephalus truncatus* Pallas. Smith and Lankester (1979) reported on the development of swim bladder nematodes in *Mysis*.

In May of 1979, two specimens of *Mysis* were collected from Green Lake, Green Lake County, Wisconsin, one of which had a cystacanth partially emerge during the preservation in ethanol. A cystacanth was later found in the other specimen and both were identified as members of the family Echinorhynchidae, but could not be further identified due to the proboscis being inverted. *Mysis* is a natural inhabitant of Green Lake, recorded from this site as early as 1924 (Juday and Birge, 1927).

The presence of this acanthocephalan in *Mysis*, and the apparent ability of *Mysis* to serve as an intermediate host for other fish parasites should lead to precautions in transplantation of *Mysis* to new lakes to prevent the introduction of new fish parasites or a better host. Though new research efforts should be undertaken to assess these risks, *Mysis* can still be considered one of the best candidates for transplantation. Pennak (1978) considered *Mysis* "a logical artificial transplant" due to its niche being unoccupied in most lakes. He also indicated that *Mysis* has been introduced into lakes in western Canada, Colorado, Wisconsin, Minnesota, New York, California, Nevada, Sweden and Russia. Each transplantation effort should be preceded by a careful study of the population to determine the presence of any parasites in *Mysis*. The population to be transplanted should then be held for a period of time to determine if any of the crustaceans have indications of infection or disease. Of value would be data on when in the life cycle or at what season are the acanthocephalans acquired by *Mysis*, and could infected individuals thus be effectively eliminated during transplantation.

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