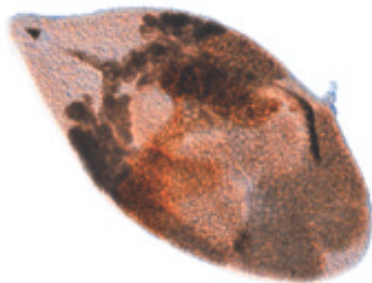


Exotic Parasite Causes Large Scale Mortality in American Coots

Over 11,000 coots died at Shawano Lake in northeastern Wisconsin in late summer, 1997. Since then, mortality has recurred annually.



Leyogonimus polyoon is a parasitic flatworm infecting coots and moorhens. Before 1996, it was reported only from Eastern Europe and was not known to cause extensive mortality in its host. However, in 1997, large scale mortality of American coots was reported at Shawano Lake, Wisconsin. Over 11,000 coots died, and examination of carcasses revealed an extensive gastroenteritis. The parasite was found deep in the intestinal tissue; some birds had up to 40,000 worms in their bodies.



Concerns were raised that the parasite could spread to other locations as coots migrated from Shawano Lake. Studies of the parasite's life cycle were undertaken to develop specific control methods.

Between 1998 and 2000, surveys of snails, which serve as hosts for the first larval stage of the parasite, were conducted at several areas in Wisconsin and Minnesota. Aquatic insects were

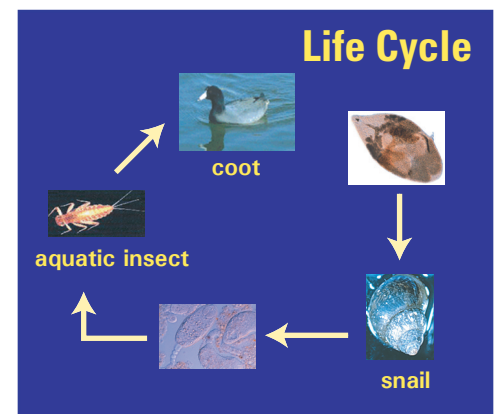
exposed to larval trematodes, which were in turn fed to hand-reared coots to identify the stages in the life cycle of the parasite.

Bithynia tentaculata was the only snail species found to shed first stage larvae similar to the adult parasite, indicating that this was the first intermediate host in the life cycle. These snails were found at Shawano Lake, the Wolf River, Lakes Winneconne, Butte des Morts and Winnebago, but only specimens collected from Shawano Lake, Lake Butte des Morts and Lake Winneconne were found to have the parasite.

Various aquatic insects such as tricoptera and odonates were susceptible to infection and hosted large numbers of second stage larvae. By 13 days of age, these second stage larvae were infectious to coots and developed into adult worms, which shed eggs for up to 21 days in bird feces.

Results: The life cycle of *Leyogonimus polyoon* involves one species of snail (*Bithynia tentaculata*) and various species of aquatic insect larvae. The only natural definitive host thus far reported to be susceptible to infection in North America is the American coot.

In Eastern Europe, the spread of the parasite is limited by the geographic distribution of the intermediate snail host. In the United States, coots and aquatic insects are widely distributed, so control of the parasite would also probably best be achieved by controlling the snail host. Cooperative studies between the USGS National Wildlife Health Center and the Wisconsin Department of Natural Resources are in progress with this goal in mind.



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