

the sample was 70.8%, with infected sharks hosting from 1 to 78 copepods. The density of infection was $17.82\% \pm 20.70$. Dispersion of *D. latifolia* throughout the shark sample was well described by a negative binomial model, indicating these parasites to be clumped (overdispersed) on these sharks. Linear regression revealed a poor overall relationship between the density of infection and shark fork length ($r^2=0.162$), indicating that a simple surface area model could not account for copepod density. Most female *D. latifolia* (51.33%) attached about the caudal keel. Males also preferred this body location (76.76% attached there), however, males exhibited a wider overall distribution about the bodies of examined sharks. Comparison of sharks infected solely with *D. latifolia* and others infected with both said species and *Pandarus* spp. revealed the distribution of *Dinemoura latifolia* to be unaltered by the presence of *Pandarus* species. This finding is contrary to findings previously reported in the literature. Overall, results of this study can be interpreted in light of our current understanding of the life history of pandarid copepods.

88 RASHLEIGH, BRENDA. University of Tennessee--Simulation modeling of competition between freshwater mussels for fish hosts.

A simulation model of the life cycles of two coexisting freshwater mussel species (Bivalvia: Unionidae) was developed in order to investigate the conditions which allow the two to coexist. The model assumes that competitive interactions at the reproductive step, during which time mussel larvae (glochidia) parasitize fish hosts, determine the long-term survival of both mussel species. I ran a series of simulations with the model using different assumptions about host attraction, glochidial release time, and immune response of the host, and found that the two species will coexist if they differ sufficiently in either the timing of their glochidial release or their success in parasitizing different species of fish. The model provides predictions which can be tested in the field and laboratory, and contributes to our understanding of the ecology of mussel communities, which will be crucial to the success of conservation efforts for these communities.

89 SMITH, JASON and LEON F. DUOBINIS-GRAY. Murray State University--Population dynamics and histopathology of parasites from freshwater mussels in Kentucky Lake.

A total of 165 specimens of a freshwater mussel, *Quadrula quadrula*, was collected, 8-10 per month, from March 1993 through October 1994 and examined for parasites. All mussel specimens were collected from a single embayment of Kentucky Lake. Two species of parasites were found. They were *Unionicola vikitra*, an aquatic mite, and a trematode, *Aspidogaster conchicola*. The prevalence of *U. vikitra* on hosts was 98% during the study period. Abundance, mean intensity, and ranges were 7.4, 7.5, and 0-5.7, respectively. The prevalence of *A. conchicola* was lower than *U. vikitra*; 69% versus 98%. Abundance, mean intensity, and range values for *A. conchicola* were 2.2, 3.2, and 0-17, respectively. Seasonal data indicated that the abundance of *U. vikitra* increased with rising water temperatures. However, the abundance of *A. conchicola* remained fairly constant during the entire study period, regardless of temperature. Previous studies of aspidogastrid diets have indicated ingestion of host blood cells and/or kidney epithelial cells by examination of parasite gut contents. The act of ingestion of host kidney tissue by *A. conchicola* was observed utilizing histological techniques.

90 DIDERRICH, VINA R. and SHARON PATTON. University of Tennessee College of Veterinary Medicine--Spore Morphology and Ultrastructure of Myxobolus sp. from the Red Line Darter, Etheostoma rufilineatum.

The spore of *Myxobolus* sp. is described from naturally infected red line darters, *Etheostoma rufilineatum*, from Abrams Creek, Great Smoky Mountain National Park. Plasmodia containing numerous pyriform spores appeared as cyst-like structures in the epidermis and musculature. Measurements of 100 spores obtained from a skin cyst were recorded and analyzed using the SAS system for statistical analysis. Variables studied were spore length and width and polar capsule length and width. The mean, standard deviation, minimum and maximum were calculated for each variable: spore L $15.34 \pm 1.04\mu\text{m}$; spore W 9.51 ± 1.01 (8-12) μm ; polar capsule L 7.52 ± 1.18 (5-10) μm ; and polar capsule W 2.62 ± 0.56 (2-4) μm . Measurements of spores from two similar species, *M.*

neurophila and red line darter microscopy. valves was a filamentous out of a dense cytoplasm cont (This work was of Tennessee C

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