Rosser et al. “Arrested Development of *Henneguya ictaluri* (Cnidaria: Myxobolidae) in ♀ Channel Catfish × ♂ Blue Catfish Hybrids.” *Journal of Aquatic Animal Health*. 2019. 31:201–213.

Abstract: ***Henneguya ictaluri* is the etiologic agent of proliferative gill disease (PGD) in farm‐raised Channel Catfish *Ictalurus punctatus* and hybrid catfish in the southeastern United States, and significant annual losses** are attributed to this disease. Research suggests that *H. ictaluri* infection dynamics in Blue Catfish *I. furcatus* and hybrid catfish (Channel Catfish × Blue Catfish) differ from those in Channel Catfish. Two separate infectivity trials were conducted to **investigate *H. ictaluri* development in Channel Catfish, Blue Catfish, and their hybrids**. On two separate occasions with two different year‐classes, **fish were exposed to pond water containing *H. ictaluri* actinospores and sampled weekly for 12 weeks (trial 1) or 14 weeks (trial 2)**. In trial 1, the presence of *H. ictaluri* was evaluated histologically and by quantitative PCR of fish tissues, including gills, blood, anterior kidney, brain, heart, liver, posterior kidney, spleen, and stomach. ***Henneguya ictaluri* DNA was detected in significantly higher concentrations throughout multiple organ systems in the Channel Catfish compared to the hybrid catfish and Blue Catfish, with the gills having higher quantities.** Myxospores were observed in Channel Catfish gill tissue at 8 weeks postexposure. **No myxospores were observed in Blue Catfish or hybrid catfish.** The second trial focused on gills only and yielded similar results, with **Channel Catfish having significantly greater *H. ictaluri* DNA quantities than hybrids or Blue Catfish across all time points.** Myxospores were observed in Channel Catfish beginning at 6 weeks postexposure and were found in 36% (58/162) of Channel Catfish sampled for molecular and histological analysis during weeks 6–14. Myxospores in hybrid catfish were sparse, with single pseudocysts observed in two hybrid catfish (1.2%) at 14 weeks postexposure. **These results imply arrested development of *H. ictaluri* in hybrid catfish. As such, culture of hybrid catfish may be an effective management strategy to minimize the burden of PGD.**

Questions (short-answer):

Q: What is the causative organism of proliferative gill disease in Channel Catfish?

A: *Henneguya ictaluri*

Q: What is the oligochaete host for development of the actinospore stage?

A: *Dero digitata*

Q: Summarize the lifecycle of *Henneguya ictaluri* in Channel Catfish.

A: Actinospore stage develops in oligochaete worm *D. digitata.* Worm releases actinospore in feces into pond water. Actinospore attaches to surface of fish (gills). Multicellular spores form within plasmodia, released into pond environment and ingested by worms to complete the life cycle.

Question:

Which of the following is true regarding *Salmincola californiensis* infection in salmonids?

1. **Infected fish had reduced swimming endurance.**
2. There is no correlation between gill damage and intensity of infection.
3. Only severe infections were found to be debilitating.
4. Gill damage from the copepods is usually diffuse.
5. *Salmincola californiensis* complete their entire lifecycle in 7-10 days.

**Practice Question:**

Grass carp which have survived *D. ctenopharyngodonid* infection will likely be partially protected from what other ciliate protozoan?

Answer: *Ichthyophthirius multifiliis*

**Diagnosis and treatment of multi-species fish mortality attributed to *Enteromyxum leei* while in quarantine at a US aquarium.**

Hyatt MW, Waltzek TB, Kieran EA, Frasca Jr S, Lovy J.

Diseases of Aquatic Organisms. 2018 Dec 11;132(1):37-48.

**What is the most common clinical sign of *Enteromyxum leei* infection in marine fish?**

1. Circling
2. Exophthalmia
3. **Emaciation**
4. Dermal lesions
5. Abnormal buoyancy

What is the most likely route of transmission of the protozoal pathogen Miamiensis avidus in leopard sharks (Triackis semifasciata)?

1. Parasitic fish vector
2. Vertical
3. Nasal
4. Bite wounds
5. Fecal-oral

Answer: C