Philometra

I. Causative Agent and Disease

Philometra is a nematode parasitizing the body cavities or tissues of fish. Larval stages of this worm migrate to the final resting sites in the subcutaneous tissues (fins, head, and body) or body cavities of predatory fish. The migration of the parasite within the host can result in inflammation of visceral organs, mechanical damage of blood vessels with hemorrhaging and destruction of skeletal joints resulting in poor growth and emaciation.

II. Host Species

Many species of marine and freshwater fish, including salmonids, are susceptible to this parasite that is found worldwide.

III. Clinical Signs

Nodules under the flesh containing juvenile or adult worms cause raised scales or are visible between the fin rays of the fish host. Larger nodules contain gravid females that eventually extrude through the skin and disintegrate to release live larvae. This is followed by complete healing of the host flesh leaving little sign of previous infestation.

IV. Transmission

Philometra has a two-host life cycle. Larval worms are transmitted through an intermediate host (copepods) to the final fish host. Predatory fish may acquire the parasite by eating infested copepods or forage fish that have preyed on infested copepods. In skin infestations the much larger female parasites excyst and burst releasing larvae into the water to be ingested by copepods where the larvae undergo a series of molts. When parasitizing a body cavity, larvae are released through the gut with the feces of the host or the female migrates to the skin surface to release larvae.

V. Diagnosis

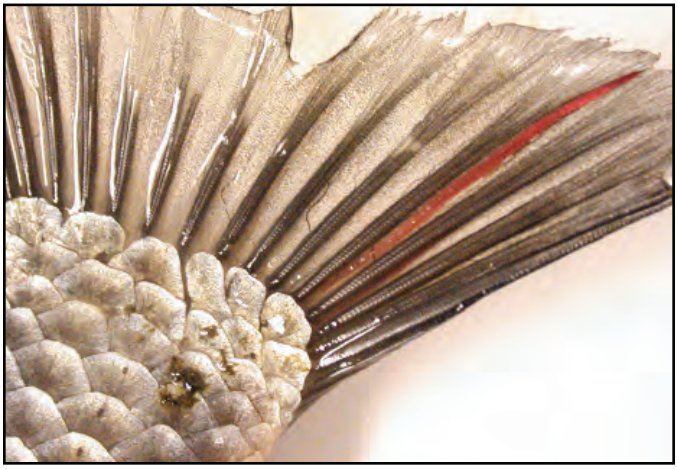
Diagnosis is made by observation of typical *Philometra* worms in fish host body cavities or subcutaneous tissues, particularly the fins, snout, and head or areas of raised scales. Dissection of nodules expose the long, smooth, filiform worms characteristic of the genera. Worms are usually red in color and the immensely larger females contain live larvae and burst easily when placed in water.

VI. Prognosis for Host

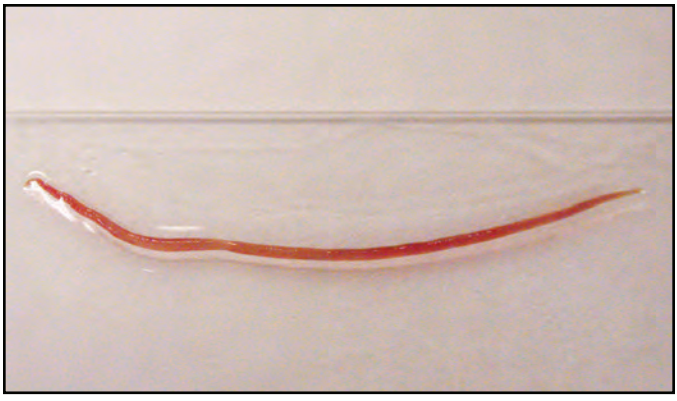
Prognosis for the host is dependent on the degree of infestation and other environmental stressors that may be present. Generally, *Philometra* is well tolerated causing no significant harm to fish hosts.

VII. Human Health Significance

Philometra is not of human health concern.



Adult *Philometra* worm (red) between the caudal fin rays of a freshwater slender bitterling.



Same *Philometra* worm dissected from fin rays above.