Philometra

I. Causative Agent and Disease

*Philometra* is a nematode parasi-
tizing 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 fresh-
water 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 leav-
ing 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 fi-
nal fish host. Predatory fish may acquire 
the parasite by eating infested cope-
pods 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, fili-
form 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.