

Gill and Gut Turbellaria

I. Causative Agent and Disease

Turbellaria found associated with bivalve molluscs are flatworms of the phylum Platyhelminthes, class Turbellaria, order Rhabdozoa and family Graffillidae. These flatworms exist as both endocommensals and parasites able to pass freely between the mantle cavity and alimentary canal of the host bivalve. They generally are found in low prevalences and intensities causing no apparent harm to the bivalve host. A common species is *Urastoma cyprinae* found on the gills of several bivalve species or free-living in muddy sediments.

II. Host Species

Turbellarians have been reported from eastern oysters and giant scallops in Atlantic Canada, in various clams, cockles, mussels and oyster species in Europe and in geoduck clams and Pacific oysters in British Columbia, Canada. In Alaska, turbellaria have been observed on the gills, within alimentary tracts and kidneys of weathervane scallops, basket cockles, blue mussels and native little-neck clams. Turbellaria are likely global in distribution although individual species may be confined to certain ranges and bivalve hosts.

III. Clinical Signs

The only gross clinical signs of infestation may be the appearance of white to pink colored "gill worms" up to 2 mm long on gill and mantle surfaces.

IV. Transmission

Bivalve turbellarians are hermaphroditic having a direct life cycle where eggs are produced that hatch in ambient seawater. The juvenile stage may then

colonize another or the same host.

V. Diagnosis

Diagnosis is by observation of small, oval or pyriform worms up to 2 mm long having a ciliated body surface in wet mounts of gill or mantle tissues. Special stains of mounted worms are used for species identification. Also, routine histological examination may demonstrate the presence of ciliated flatworms in the intestinal tract, digestive tubules or kidney. The presence of external cilia differentiate turbellarians from other classes of flatworms.

VI. Prognosis for Host

Turbellarians cause no apparent harm to bivalve hosts.

VII. Human Health Significance

There are no zoonotic human health concerns with the presence of turbellarians on the surface or within shellfish tissues that may be consumed uncooked.



Histological section of a ciliated turbellarian (arrow) in the intestinal lumen of weather-vane scallop