

Epistylis (Heteropolaria)

I. Causative Agent and Disease

Epistylis is a sessile, ciliated freshwater protozoan that propagates as colonies at the ends of non-contractile stalks on the skin and sometimes the gills of fish. This organism is not a true parasite but an epibiont utilizing fish as a substrate for attachment that will cause tissue necrosis from secreted proteolytic enzymes. This biofouling and tissue damage results in osmoregulatory stress and secondary invasion by opportunistic bacteria and water molds. This protozoan exists worldwide.

II. Host Species

All species of salmonids are susceptible, but infestations are more common in catfish and other warmwater fish species including their egg masses.

III. Clinical Signs

Flashing is a nonspecific sign of external attachment by any parasite or epibiont. Infested fish may also produce excessive external mucus and exhibit white or hemorrhagic lesions.

IV. Transmission

This organism reproduces by binary fission and is horizontally transmitted from fish to fish by transformation of the zooid (bell shaped body) into a disc-shaped ciliated telotroch. Slow water flows with high organic loads and abundant bacteria on which it feeds favor the colonization of this protozoan.

V. Diagnosis

Diagnosis is made by observation of the live protozoan in wet mounts of skin scrapes. The colonies appear like a cluster of bluebells growing on stalks attached to the fish by a disc. *Epistylis* has branched non-contractile stalks.

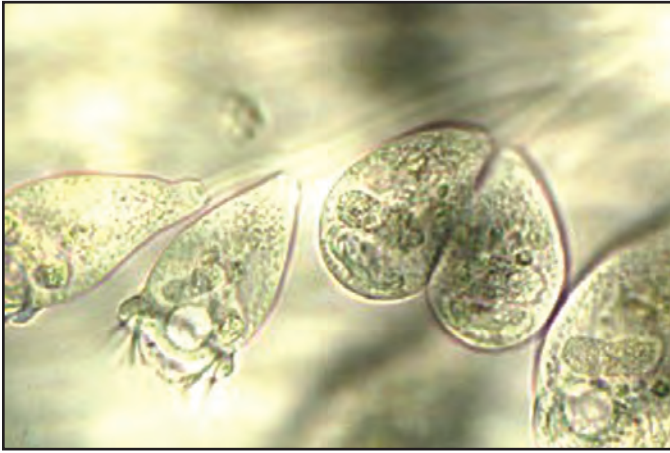
VI. Prognosis for Host

The prognosis for an infested fish is good if organism numbers are low and fish are not stressed. Heavy colonial growth in a hatchery setting must be treated with salt or chemicals (formalin or hydrogen peroxide) to reduce numbers of protozoa and prevent secondary infections by bacteria and water molds. Infestation is a sign of poor water quality that should be improved.

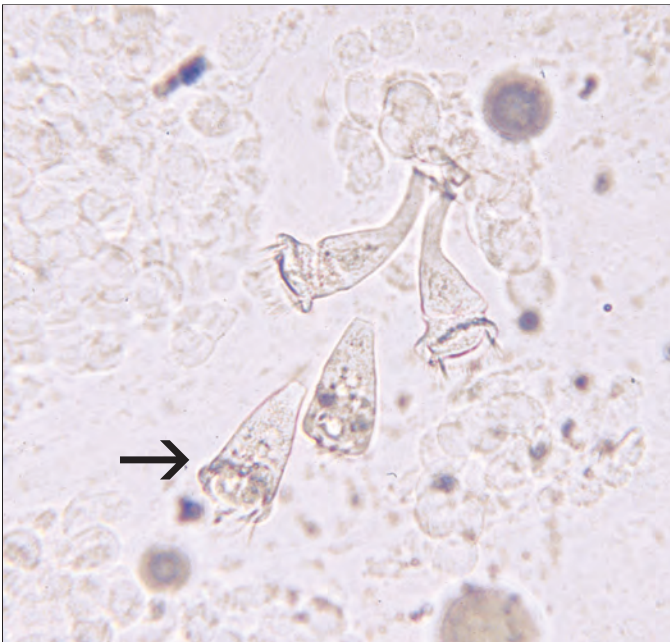
VII. Human Health Significance

There are no human health concerns associated with *Epistylis*.

PROTOZOA



Stalked ciliates of the genus *Epistylis*, X 1000.



Skin smear from a juvenile sockeye salmon with *Epistylis* ciliates (arrow) among host epithelial cells, X 400.