Parasitic Diseases of Fish I

PROTOZOAN DISEASE

Ichthyobodo Infection (Ichthyobodiasis)

- Fish live in an aquarium, a pond, or in saltwater
- They are at risk for being infected by parasites.
- Some parasites are particular to the type of water, but one parasite that infects fish living in all three types of water is the protozoan parasite *Ichthyobodo*.

Transmission

- The parasitosis is horizontally transmitted by direct contact among diseased and healthy fish.

Ichthyobodiasis

- The most common instigator of this protozoan parasite infection is stress due to poor sanitary conditions and **overcrowding** of the aquarium, tank or pond.
- Stress leads to a weakened immune system, which leads to vulnerability to this parasite.
- Even overfeeding can stress the fish and lead to parasitic infection.

Ichthyobodiasis

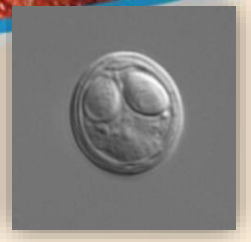
- This parasitic infection affects the skin and gills of the fish. The skin of the infected fish looks **steel**-grey in color and produces a blue or grey colored *mucus*.
- Generally, the infected fish will show signs of *lethargy* and weakness with loss of appetite.
- The fish may swim near the water surface to gulp air and may also **rub against objects.**
- Among the pathological alterations, it has been observed destruction of the epithelial cells due to parasite attachment, as well as degenerative and proliferative epithelial alterations with reduced mucus production

- Infected fish are treated in water that has been medicated with formalin, salt, and potassium permanganate or copper sulfate.

Whirling disease (Black tail)

- Whirling disease is a chronic, debilitating and highly infectious disease of salmonids, caused by protozoan parasites called *Myxosoma (Myxobolus) cerebralis*. The disease characterized by whirling movement of the affected fish, **malformations of the skeleton & black coloration of the posterior part of the body.**
- Spores of *M. cerebralis* remain viable for a long time on the bottom of the pond (up to 12 years).

Whirling disease



Transmission:

- The route of transmission to the new host is orally.
- The spores gain entrance to the fish by ingestion and the sporeplasm of the spore emerges and migrates to the cartilage though blood and lymph vessels.
- The very small sporeplasm is called trophozoite. Grows and its nuclei divide repeatedly to form a much larger organism which finally produces spores.

Whirling disease

- The appearance of the clinical signs of the disease depends on the age of the fish & severity of the infection.
- There is a disturbed in equilibrium of fish because of damage to the cartilaginous parts of ear.
- Fish swim in circles, then rest on the bottom and again begin to whirl in circles.
- The posterior third of the body becomes **black in color. The dark area** is sharply delimited from normal part of the body that lesions due to damage of the sympathetic nerve, which are responsible for pigmentation (pigment motor function).
- Fish can not feed and die from exhaustion.

Whirling disease

- There is no therapy for treatment of infected fish.
- Hygienic disposal of dead fish.
- Drying the fish farm & disinfection the bottom with calcium oxide.
- The water in the hatcheries and rearing tanks must be free from spores.
- Disinfection of hatcheries and equipment with 1% of sodium hydroxide, potassium hydroxide.