
Diseases and Treatment



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The Ground Rules

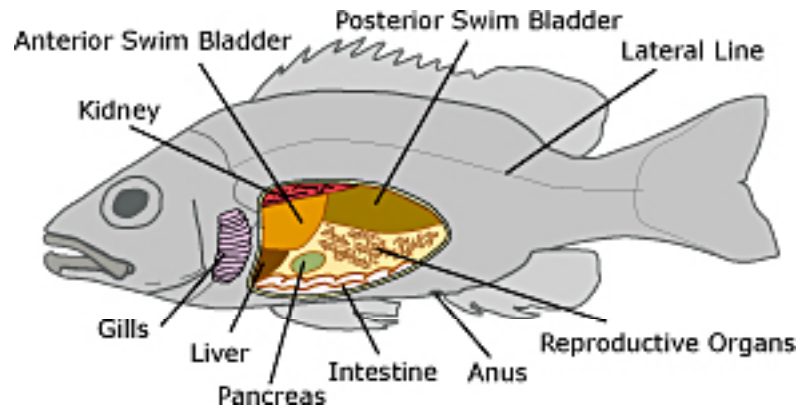
Management of disease conditions is a subjective endeavor. When using any medication, follow all instructions or standard procedures carefully. Diagnosis is made by your best guess and treatment is not always successful. Responsible attempts should be made, however, to save fish. Heroic attempts should be made to prevent disease.

Since most medications are absorbed by carbon, remove all carbon filtration before treatment. Many medications deplete oxygen reserves in the water. Add additional aeration when necessary. Never, never kill the filter bed.

Be observant. An awareness of healthy behavior and appearance will tip you off much sooner when problems are brewing. Observe fish carefully during treatment. What you learn from one treatment may help you during the next outbreak.

Log all treatments.

Anatomy Basics



Gills - The primary function of the gills is the absorption of oxygen and the excretion of carbon dioxide and ammonia. Healthy gills are deep red and do not stick together. Unhealthy gills are usually pale and the layers appear to clump. Additional signs of unhealthy gill function are listlessness, flashing and rubbing. Upon examination, damaged gills show excess mucous along with pale color.

Swim Bladder (Air Sac) - Located in the dorsal area of the abdomen, this dumbbell-shaped sac is just below the kidney. It allows fish to have buoyancy and balance.

Gonads - These are the reproductive structures, egg sacs in females and testes in males. The egg sack in females may fill a major portion of the abdominal cavity.

Gastrointestinal Tract - This long tubular organ is slightly smaller than the stomach. The stomach is behind the head and above the liver.

Spleen - This organ produces and stores red blood cells and is found embedded in the intestine as a small red mass. Can only be seen after removing intestinal fat.

Liver - Liver function is the digestion, filtration and storage of glucose. It appears as a brownish red mass toward the anterior part of the body cavity. The liver also produces enzymes that are stored in the gall bladder that help breakdown food. The liver can only be seen after removing intestinal fat.

Gall Bladder - Digestive enzymes and bile are stored here. It is a small sac found embedded in the liver tissue.

Heart - The heart is a two chambered organ that circulates blood, located adjacent to the gills, just behind the head.

Kidneys - There are two kidneys, one above the air sac and one slightly in front of it. Both are below the vertebrae. Kidneys produce white blood cells and filter wastes.

Brain - This organ is located in the head between but slightly behind the eyes. The brain controls all voluntary and involuntary functions but probably won't get many rockets off the ground and contains no owner serviceable parts.

Freshwater Fish Diseases and Treatments

I. Viral Infections

◆ *Lymphocystis* infection - 'cauliflower' disease is characterized by compound wart-like growths on the skin and fins of the fish. Spread to other tankmates is an unresolved question.

• Treatment

Like most viral infections, treatment is not often successful. Sometimes the disease disappears on its own.

Isolate fish for treatment. If the disease is confined to the fins, scraping of and cutting away the growths may be effective. This should be done with extreme caution to prevent fatal injury to the tissues.



II. Bacterial Infections

These infections are common among tropical fish. Affected fish generally present with one or more of the following symptoms: red patches on the skin and fins; hemorrhaging; whitish or yellowish patches on the skin; fin and tail rot; white mouth; abnormal swimming; lethargy and loss of appetite.

◆ Common bacterial infections

- *Columnaris flexibacter*
- guppy disease - fin and tail rot and white patches
- mouth fungus - white or yellowish patches around the mouth and surrounding areas
- loss of blue color and pale skin patches on Neon Tetras and Cardinals, sometimes seen as "rings" of whitish patches around Tetras and Guppies.

• Treatment

Nitrofurazone #AL4007, #AL4008

Kanamycin #AL4001, #AL4002

Neomycin #AL4005, #AL4006



◆ ***Aeromonas* and *Pseudomonas***

These infections are often seen in fish that have been maintained in poor conditions. These infections are frequently seen in goldfish and koi and are believed to be secondary infections of a viral disease. Definitive diagnosis is made microscopically.

Symptoms:

- swollen belly scales may be raised like dropsy
- red or pale patches on skin
- sores on the skin described as “ulcers”

Note: fin and tail rot may occur at the same time as other symptoms.

● **Treatment**

Oxytetracycline, #AL4009, #AL4010

Nitrofurazone #AL4007, #AL4008

Nitrofurazone used with Kanamycin, #AL4001, #AL4002

Neomycin, #AL4005, #AL4006

Feed medicated food if fish eat



◆ **Pop-eye - Exophthalmus**

Protruding eyes is caused from accumulation of fluid behind the eye and is often a secondary reaction from bacterial infections. It is also caused by fatty degeneration of internal organs. Definitive diagnosis can be made visually.

● **Treatment**

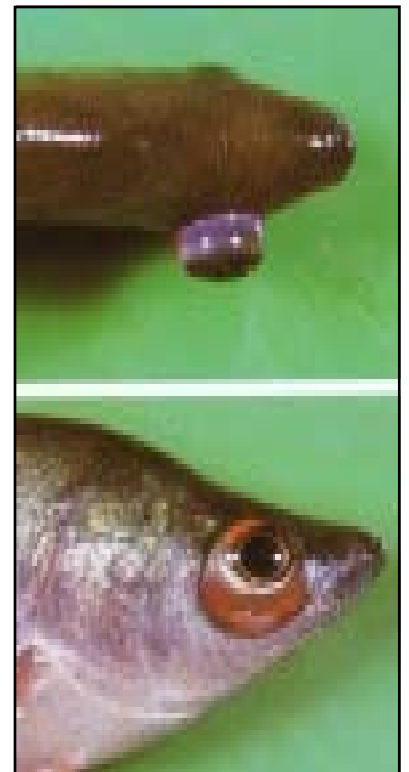
Oxytetracycline, #AL4009, #AL4010

Nitrofurazone #AL4007, #AL4008

Nitrofurazone used with Kanamycin, #AL4001, #AL4002

Neomycin, #AL4005, #AL4006

feed medicated food if fish eat



◆ **Fin and Tail Rot**

This disease is usually one of the first signs of a bacterial infection and is often coupled with other bacterial infections. It can also be indicative of parasite infestation, such as Ich, Costia, or skin flukes. Definitive diagnosis can be made visually.

● **Treatment**

Oxytetracycline, #AL4009, #AL4010

Nitrofurazone used with Kanamycin, #AL4001, #AL4002

Neomycin, #AL4005, #AL4006

Feed medicated food if fish eat

See *Costia* if it is suspected



◆ **Bacterial Gill Disease**

This often occurs with other bacterial infections. It may occur because the gills have been damaged from ammonia burn or dirty water. Infected fish show respiratory problems and may hang at the surface gasping for air. Definitive diagnosis is made microscopically.

● **Treatment**

Use Methylene Blue, 4oz #KD1016 and #KD1066 (to reduce stress - do not use it in a cycled tank - it will kill the biofilter) with one of the following:

Oxytetracycline, #AL4009, #AL4010

Nitrofurazone #AL4007, #AL4008

Nitrofurazone used with Kanamycin, #AL4001, #AL4002

Feed medicated food if fish eat



◆ **Fish Tuberculosis**

Caused by *Mycobacterium sp.*, this can be seen as tubercles (grayish-brown nodules) on the skin or gills. They could also form on the internal organs. Fish may look emaciated or have curved spines, swim irregularly, or become listless. *Mycobacterium* is almost the only Gram- positive bacteria common to tropical fish.

● **Treatment**

Kanamycin #AL4001, #AL4002

Prevention through the elimination of infected fish, changing water quality factors and anything that strengthens the immune system could be effective - vitamins, variations in diet, etc.



III. Fungal Infections

These are usually caused by *Saprolegnia sp.* and are seen as cotton-like growths on any part of the body. Fungal infections are caused by *Saprolegnia* invading an open wound or area of the cuticle or slime coat layer that has been penetrated. This could be caused from injury such as fish fighting or scraping themselves on something while being collected etc. Often it is secondary to a bacterial infection and the bacterial infection must be treated first or at the same time as the fungus. Definitive diagnosis can be made visually.

- **Treatment**

Fish can be swabbed with Bacta-Dip #AL4019, #AL4021 Methylene Blue, 4oz #KD1016 and #KD1066 has proven effective (do not use it in a cycled tank it will kill the biofilter)



IV. Parasites

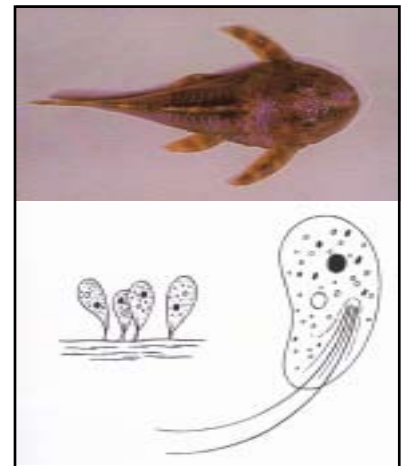
A. Flagellates - One-cell organisms with flagella for locomotion.

- ◆ **Costia**

Very mobile, it attaches to the skin, fins and gills of fish. The parasite causes the fish to secrete excess mucus, forming a milky film on the skin. It is sometimes hard to see. It may look greyish. Large infestations may damage the gills. Large mortalities usually follow. After the parasite damages the skin, secondary bacterial infections may follow. Definitive diagnosis is made microscopically.

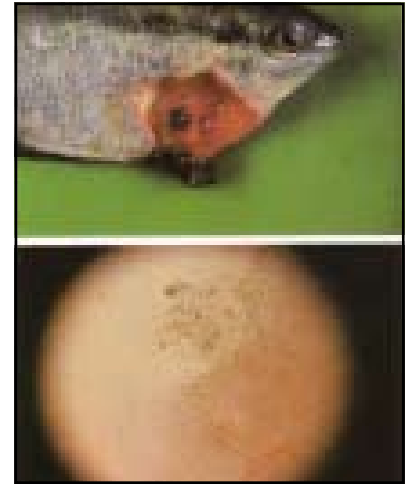
- **Treatment**

Quick-Cure, .75oz #AP689 or Malachite Plus, for large systems or store use, combined with:
Methylene Blue, 4oz #KD1016 and #KD1066 at 1/4 dose (do not use it in a cycled tank it will kill the biofilter) and Nitrofurazone #AL4007, #AL4008
Remember, Quick Cure must be used at a lower dose on Tetras



◆ **Spironucleus, Hexamita or Octomitus**

Spironucleus is common in tropical fish - *Hexamita* is most often seen in coldwater fish and *Octomitus* in Discus. They are most often found in the intestine causing considerable damage to the intestinal walls. Mass infections may infect other organs. "Hole in the head" is only seen in adult fish and is caused by the effects these parasites have on organs affecting the lateral line. This symptom is caused not only by the parasite, but also by bad water conditions, unbalanced diet, and voltage in the water. Most often seen in Discus, Angelfish, and other cichlids. Other symptoms include dark body color, emaciation, and white, stringy excrement. Definitive diagnosis is made microscopically.

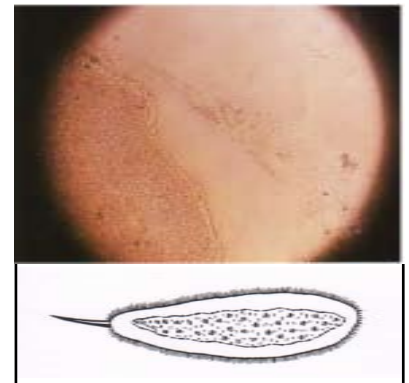


● **Treatment**

Metranidazole #AL4024, #AL4025

◆ **Protopalina symphysodonis**

This oblong parasite is seen mainly in Discus and Kissing Gouramis. It can cause severe damage to the intestinal wall. Holes may occur in adult fish similar to *Hexamita* infection. Signs are dark body color, patches on the skin and whitish, stringy excrement.

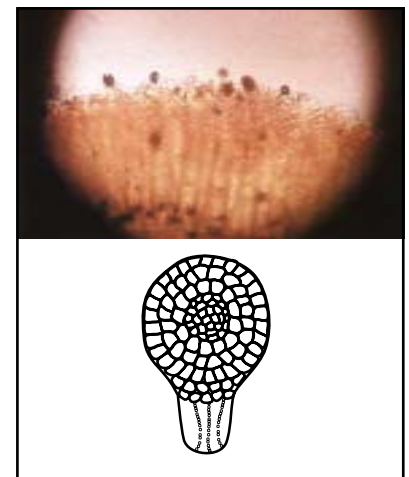


● **Treatment**

Metranidazole #AL4024, #AL4025

◆ **Oodinium - velvet disease**

This disease is better known by its causative agent, *Amyloodinium pillularis*. *Amyloodinium ocellatum* is seen in marine fishes. Symptoms include a granular-like film, thus the term 'velvet', and heavy respiration and the fish scraping itself against objects. This disease is very curable with careful observation of the onset of symptoms and medication. Definitive diagnosis can be made visually.

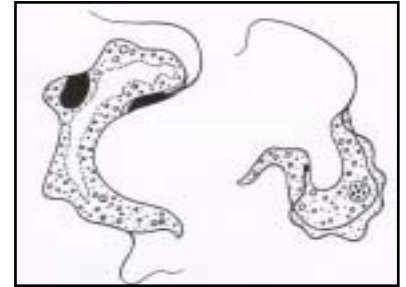


● **Treatment**

Cupramine, 50ml #SC598

◆ ***Cryptobia sp* and *Trypanosoma sp***

Fish commonly affected by *Cryptobia* and *Trypanosoma* are Malawi Cichlids and Florida pond-raised fish. These infestations are also seen in some wild caught South American Catfish. *Trypanosoma* organisms are usually found in the bloodstream. Definitive diagnosis is made microscopically.



● **Treatment - *Cryptobia sp***

same as *Costia* - fish show similar symptoms.

Of special note - fish sometimes scrape gill covers on rocks and Malawi Cichlids show dark stripes or patches giving rise to the name, "black stripe disease"

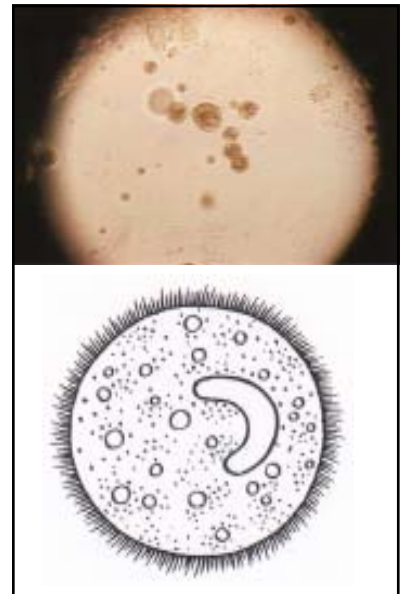
● **Treatment - *Trypanosoma sp***

Metranidazole #AL4024, #AL4025 mixed in food may work. Sprinkle one capsule on 4oz of slightly thawed frozen food. Treatments are seldom successful. Some references have been made to using antimalarial drugs to clear these infestations.

B. Ciliates - One-cell organisms that use numerous cilia for locomotion.

◆ ***Ichthyophthirius multifiliis* (Ich)**

The most common parasite infection, Ich is seen as white spots, thus term "white spot disease." First, fish swim erratically followed by rapid breathing. Later, they may hang in groups while gasping for air. Pectoral fins are often clamped. Severe cases result in the fish lying listlessly on the bottom or hanging at the top of the water. Remember, adult organisms, seen as the large white spots, are not destroyed by medications. Medications break the life cycle of the disease, eventually eliminating the adult phase, so treatment should continue for 6 to 7 days followed by a 1/2 treatment in 14 days. Definitive diagnosis is made visually.



● **Treatment**

Quick-Cure, .75oz #AP689

Formalin, .75oz #AP8305, for fish sensitive to malachite green

**all remedies are helped by using them with salt, if possible,

Aquarium Salt, 16oz #APH1017, #APH1018

◆ **Chilodonella**

Fish show respiration difficulties. Gill covers are flared open and fish hang in groups at the water surface gasping for air. Gray slime or fog on fish, clamped fins, body shimmy are other symptoms. This infection usually develops in poor water conditions. It also develops more quickly if tank water temperature drops to 68°F. Definitive diagnosis is made microscopically.

● **Treatment**

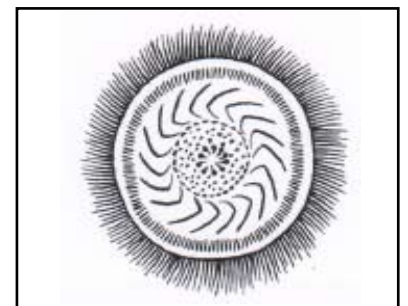
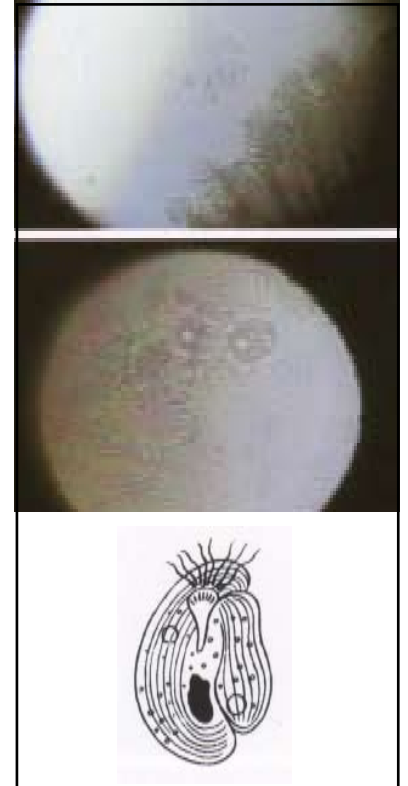
Quick-Cure, .75oz #AP689 combined with:
Methylene Blue, 4oz #KD1016 and #KD1066 at 1/4 dose (do not use it in a cycled tank it will kill the biofilter) and
Nitrofurazone #AL4007, #AL4008 for secondary infections

◆ **Trichodina**

Disk-shaped Trichodina is usually found on fish that live in very dirty conditions, often after transport. Definitive diagnosis is made microscopically.

● **Treatment**

Quick-Cure, .75oz #AP689 combined with the following for heavy infestations or when the full dose of Quick Cure can not be used, as with Tetras, etc:
Methylene Blue, 4oz #KD1016 and #KD1066 at 1/4 dose (do not use it in a cycled tank it will kill the biofilter) and,
Nitrofurazone #AL4007, #AL4008 for secondary infections
Parasite Guard #SC2453



C. Parasitic Worms

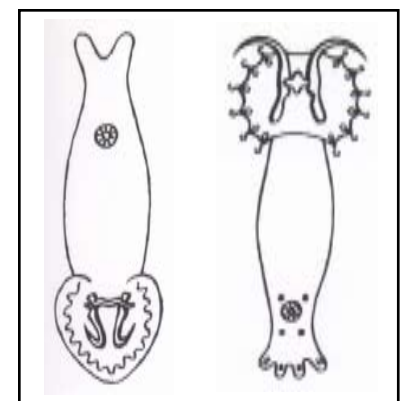
◆ **Gyrodactylidae** - Skinflukes

◆ **Dactylogyridae** - Gill flukes

These parasites are best diagnosed by microscopic examination of body scrapings and gill cuttings. Symptoms include emaciation, slimy gills, increased respiration, scratching gills, and gills are red and distended.

● **Treatment**

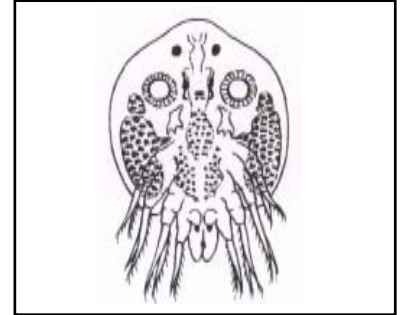
Praziquantel #AL4011 #AL4012
Lice & Anchorworm Treatment #EL144 #EL145 #EL146



D. Copepods (crustacea)

◆ *Argulus sp* - Fish Lice

Fish lice are easily detected on the fish as greenish, flat discs, approximately 5mm in diameter, with two eye spots, suckers and small legs. Symptoms include inflamed gills and small red sores. crustacean or branchiurian parasite most commonly encountered in ponds, but they are also found in aquaria. They are believed to carry and spread *Aeromonas*.



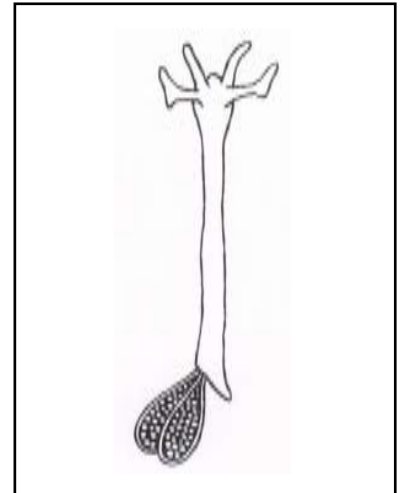
● Treatment

Praziquantel #AL4011 #AL4012

Lice & Anchorworm Treatment #EL144 #EL145 #EL146

◆ *Lernea sp* - Anchor Worm

This parasite, grayish and threadlike and reaching lengths of 12mm, can be seen clearly attached to any part of the fish and causing inflamed gills and red sores. The female anchors itself to the flesh of the fish causing hemorrhaging and the resulting sores are sites of secondary infections by bacteria and fungi.



● Treatment

Praziquantel #AL4011 #AL4012

Lice & Anchorworm Treatment #EL144 #EL145 #EL146