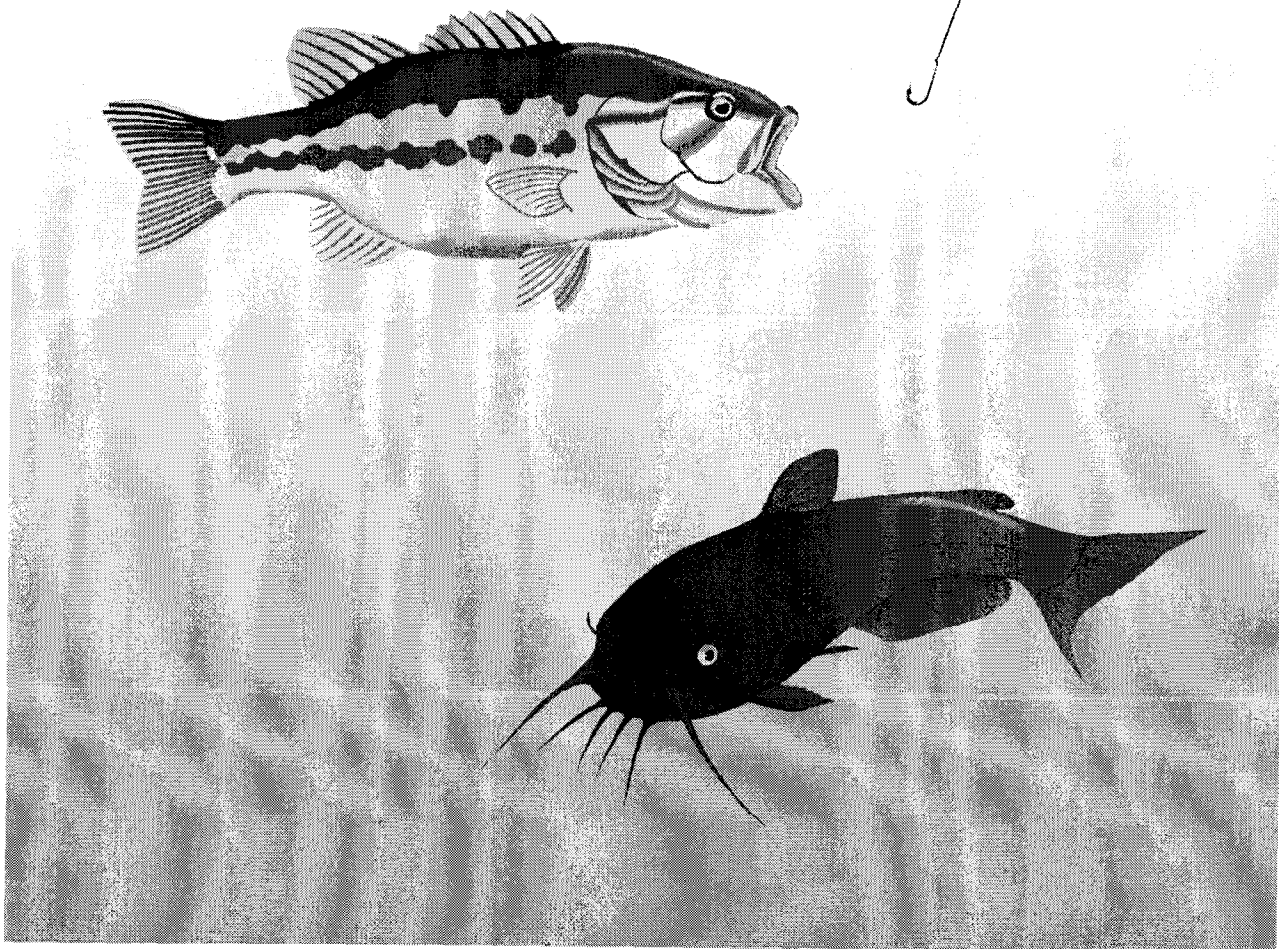


The University of Georgia College of Agricultural & Environmental Sciences  
Cooperative Extension Service

# Angler's Guide to Fish Diseases and Parasites



# ANGLER'S GUIDE TO FISH DISEASES AND PARASITES

Prepared by George W. Lewis, Head, Extension Aquaculture and Fisheries Department

Occasionally anglers catch fish that show signs of infection or parasitism. Is the fish safe to eat? The usual and safest response to this question is, "When in doubt, don't." However, very few fish diseases can be transferred to humans. Almost all fish are safe to eat when thoroughly cooked, smoked or frozen.

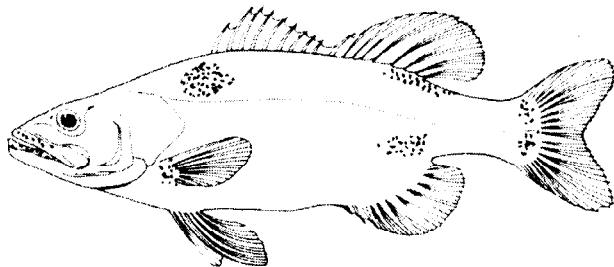
Fish are a valuable resource in Georgia. Not only do they provide important recreation, but they are also a valuable supplement to the family food budget. The anticipation of any fisherman, whether a young person

with a cane pole and a can of worms or an "old pro," is a quality fish for the table. It is the unwritten law of any true sportsman to utilize the fish he or she catches. The purpose of this publication is to help you, the angler, determine if the fish you've caught is worthy of your skillet. Remember, a sick fish will not take the hook.

For convenience, we have listed groups of parasites diseases and other causes of abnormalities sometimes seen in the fisherman's catch.

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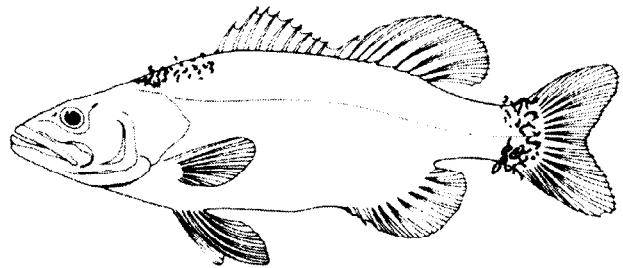
## Viruses and Bacteria



These microorganisms cannot be seen with the naked eye. They cause many diseases in fish. Symptoms include swollen, fluid-filled body cavity, bulging eyes, bloody fins, bloody spots on the skin or base of scales, sores, and lesions, etc.

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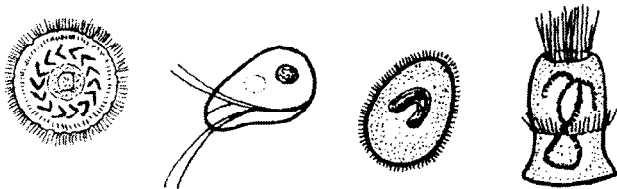
## Fungi



Fungi are small, strand-like parasites. They normally do not infect healthy fish. They usually grow on dead tissue or infected wounds. Most of the fungi on fish have a patchy, gray-white, cotton-like appearance.

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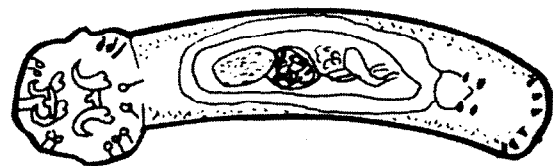
## Protozoa



These are microscopic, single-cell animals. They can be found on the gills and body surface or imbedded in the flesh. There are many different protozoans, and they cause a variety of fish diseases. Fisherman usually observe the damage they cause but rarely see the microorganism without the aid of a microscope.

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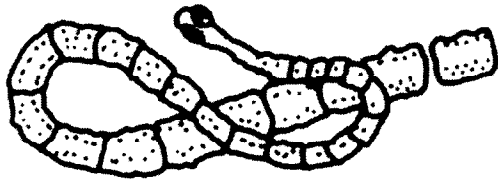
## Trematode or Fluke



There are two groups of flukes. Monogenetic flukes live on the external body surface and multiply on the same host. Digenetic flukes are internal fish parasites and require two or more hosts to complete their life cycle. Other hosts may include snails, clams, birds or other fish — but not man. Trematodes can be found in cysts in the flesh or other internal organs. They also can live in the eye, blood, gills and other parts of the fish. Trematodes are rarely observed by anglers.

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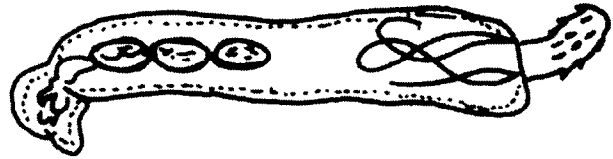
### Cestode or Tapeworm



These parasites are commonly observed by fishermen when cleaning their catch. Larval tapeworms form cysts on or in the internal organs or in the body cavity. Adults are white and worm-like and are found in the intestines.

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### Acanthocephalan or Spiny-Headed Worm



These parasites are rarely seen by fishermen. They live in the intestines of fish.

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### Nematode or Roundworm



Nematodes are very common parasites of fish. The larvae may be found in cysts or coiled in or on the internal organs. Adults are usually found in the intestines. Some are found coiled under the skin.

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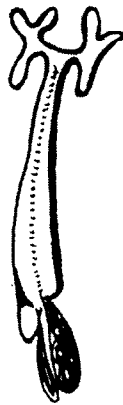
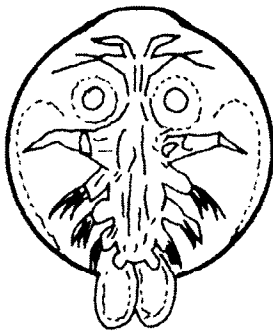
### Leeches



These parasites are external, blood-feeding animals. They leave circular wounds on the fish.

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### Copepods



These small crustaceans can be embedded in flesh, gills or mouth. Some move freely over the body surface.

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### Tumors

As in other animals, tumors occasionally occur on fish.

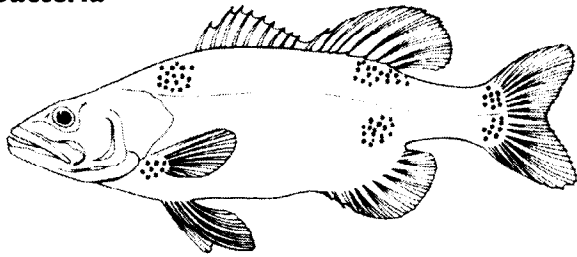
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### Physical Injury

Predators, such as birds and other fish, can cause wounds and other malformities.

# OBSERVED EXTERNALLY

## Bacteria



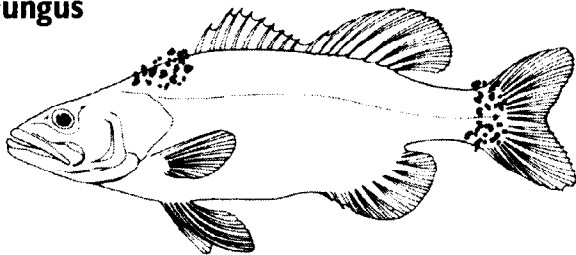
### Visual Signs

Lesions, sores, hemorrhages, fish pop-eyed, blood under scales, or loss of scales.

### Comments

Various species of bacteria can infect fish. Symptoms vary depending on bacteria and fish species. Bacterial infections are usually the result of a stress on the fish or infection of a wound. An infected fish is edible. Trim away infected flesh.

## Fungus



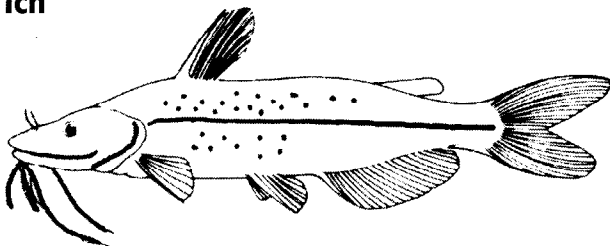
### Visual Signs

Cotton-like, white-tan-gray fuzzy growth on body or fins.

### Comments

Fungus infection of wound or lesion. An infected fish is edible. Trim away infected flesh.

## Ich



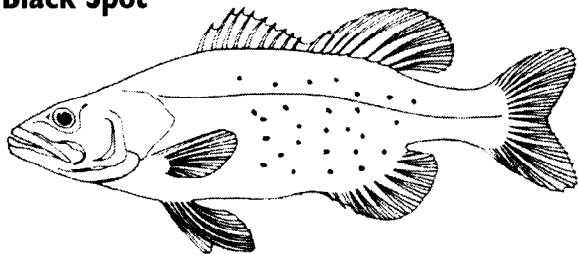
### Visual Signs

Small, pinhead-size white spots on the skin of catfish and sometimes excessive mucus (slime) production.

### Comments

Ich (*Ichthyophthirius*) is a common protozoan parasite of catfish. It occurs on the skin and gills of catfish and some other fish species. An infected fish is edible. Clean and prepare as usual.

## Black Spot



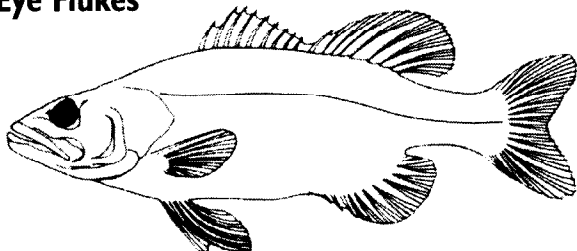
### Visual Signs

Small, black-to-purple spots under the skin or in the flesh of scale fish.

### Comments

*Black Spot* is one of the more frequent parasites observed by fishermen. It is caused by larval flukes encysting under the skin or in the flesh. An infected fish is edible. Clean and prepare as usual.

## Eye Flukes



### Visual Signs

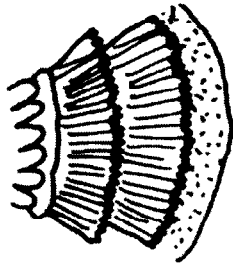
Eye opaque or deformed.

### Comments

*Eye Flukes* live in the fluid of the eye. Although they cannot be seen by the fishermen, they eventually cause blindness in the fish. An infected fish is edible. Clean and prepare as usual.

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## Gill Parasites



### **Visual Signs**

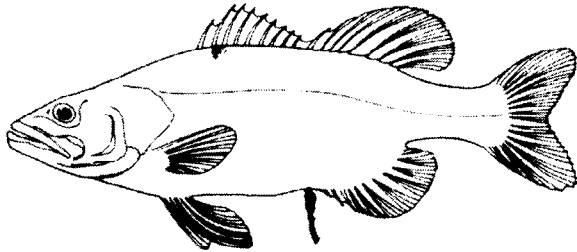
Gills swollen and pink.

### **Comments**

There are a number of gill parasites infecting fish. They are microscopic and only the damage they cause is observed by the fisherman. Some of these parasites are *gill flukes* and a number of *protozoan* species. Chemicals in the water can also irritate the gills and present the same symptoms. Unless chemicals are suspected, the fish is edible. Clean and prepare as usual.

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## Roundworms



### **Visual Signs**

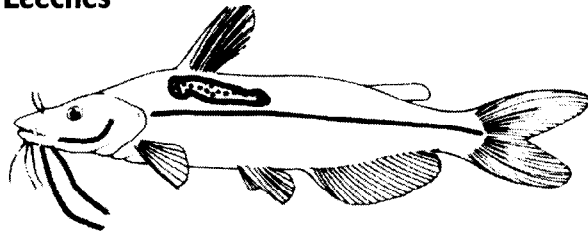
Thread-like red worm extending from the anus.

### **Comments**

Roundworms can be found throughout the intestines. They sometimes can be seen extending from the anus. An infected fish is edible. Clean and prepare as usual.

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## Leeches



### **Visual Signs**

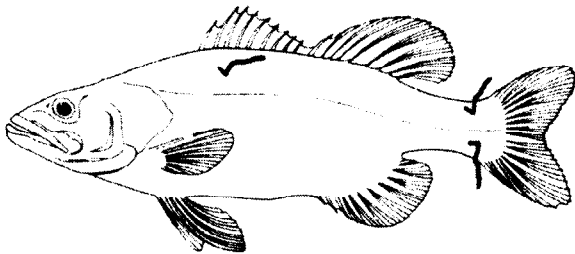
Worm-like animal attached to the body, head, fins or gills.

### **Comments**

Leeches are blood-sucking animals that leave a circular wound after they have dropped off the fish. An infected fish is edible. Clean and prepare as usual.

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## Anchor Worm



### **Visual Signs**

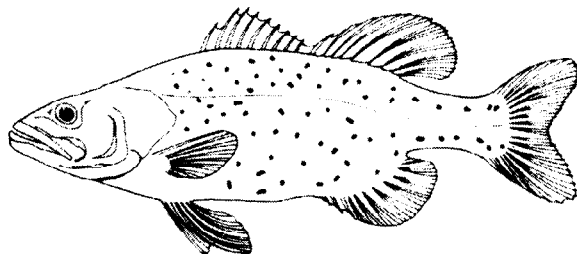
Small, red pustule with red thread-like body protruding from wound at the base of scale or on or near the base of fins.

### **Comments**

Anchor worm is an appropriate name for this parasitic copepod. It buries its anchor-shaped head into the flesh and allows its body to hang free of the wound. An infected fish is edible. Clean and prepare as usual.

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## Fish Louse



### **Visual Signs**

Small, bloody areas at the base or under the scales of a fish.

### **Comments**

Fish lice are microscopic copepods rarely seen by fishermen. They feed on the blood by piercing the skin. The bites can become infected. An infected fish is edible. Clean and prepare as usual.

# OBSERVED INTERNALLY

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## Flukes, Tapeworms, Roundworms, or Spiny-Headed Worms



### Visual Signs

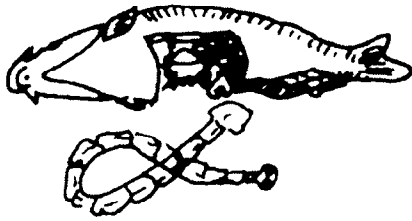
White worms in the intestine.

### Comments

Adult flukes, tapeworms, roundworms or spiny-headed worms are commonly observed in the intestines of fish. The fish is edible. Clean and prepare as usual.

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## Tapeworm



### Visual Signs

Large, white flat worm in body cavity.

### Comments

Tapeworm found in the body cavity of carp suckers, minnows and some other fish. The fish is edible. Clean and prepare as usual.

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## Larval Roundworm



### Visual Signs

Worm encysted on internal organs coiled like a watch spring.

### Comments

Larval Roundworm. The fish is edible. Clean and prepare as usual.

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## Larval Flukes



Heart

### Visual Signs

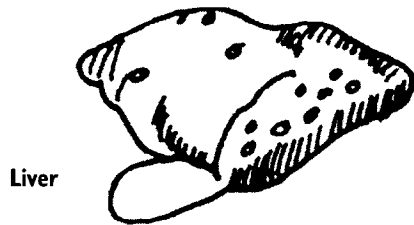
Small cysts on internal organs.

### Comments

Larval Flukes. The fish is edible. Clean and prepare as usual.

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## Larval Tapeworms



Liver

### Visual Signs

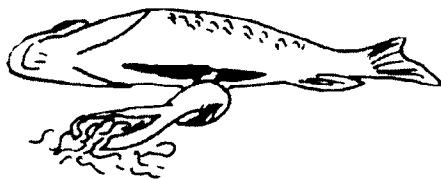
Small, white thread-like worms on or in internal organs.

### Comments

Larval Tapeworms. Often found in the ovaries. The fish is edible. Clean and prepare as usual.

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## Spiny-Headed Worm



### Visual Signs

Small, white-to-orange worm in body cavity or attached to intestines.

### Comments

Spiny-headed worm usually lives inside intestines. Sometimes they are found lying in the body cavity with their heads buried in the intestines. The fish is edible. Clean and prepare as usual.

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Material adapted from *What's Bugging That Fish — An Angler's Guide to Fish Diseases and Parasites*, Nebraska Game and Park Commission.

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Gale A. Buchanan, Dean and Director