

Sessile ciliated protozoan from fish skin

# Common Parasites and Diseases of Puerto Rican Freshwater and Marine Sport Fishes

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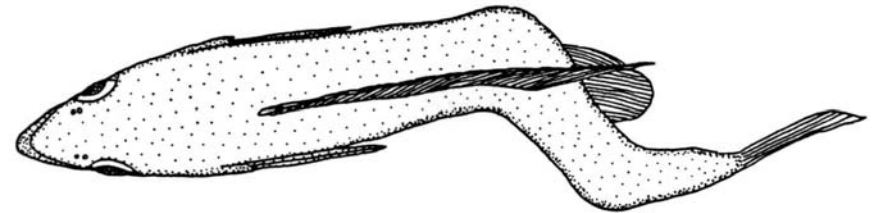
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## Crooked Back



This condition can be caused by several factors but in Puerto Rico we have found it in Largemouth bass and identified a bacterial infection as the cause. The fish appear deformed with a curved spine. These fish are not very pretty and it is best to discard them as some of these bacteria may harm humans.

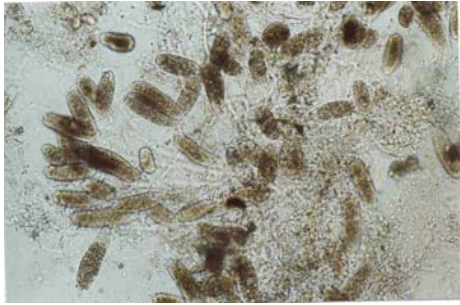
## Red Sore



Areas of reddened skin that seem to have something growing on them, characterize this



condition. These areas can be found on almost any part of the body but is often found on the side of the fish. It is caused by a combination of a sessile ciliated protozoan and bacteria that adhere to the surface of the protozoan. This



combination floats around in the water and opportunistically attaches to a scale or bone that has become exposed to the water by some kind of small injury to the fish's skin.



After attachment the bacteria infects the dead skin around the injury and further damages it allowing the protozoan to grow and increase its area of

attachment. Sometimes large areas of skin are affected. Fish may die due to the bacterial infection reaching the blood stream, causing a generalized infection.

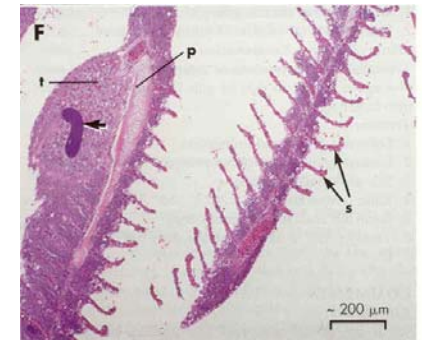
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## Ich and Marine Ich

This protozoan disease causes small white spots to form on the skin of the fish. Some describe it as appearing like a sprinkling of salt on the fish. It actually burrows under the epithelial layer of the skin, causing irritation. It occurs not only on the skin but also on the eyes and the gills. The gills are severely



irritated by this protozoan and the fish may suffocate from its effects. It is called "Ich" because the scientific name is *Ichthyophthirius*. A similar parasite attacks marine sport fishes (called *Cryptocaryon*) and looks the same as freshwater Ich.



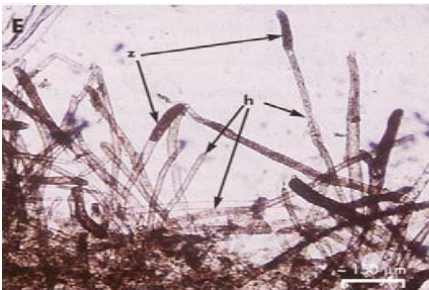
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## Saprolegnia

If you see a brown cottony growth on the sides, fins or tail of a fish it could be caused by this dangerous organism. It looks like a fungus and microscopically resembles a fungus but it is not a



true fungus. It invades the skin of the fish, mostly in the winter. If a fish becomes infected, it can



die. Microscopically, it looks brownish to greenish in color and the linear hyphae do not have separations delimiting individual cells.

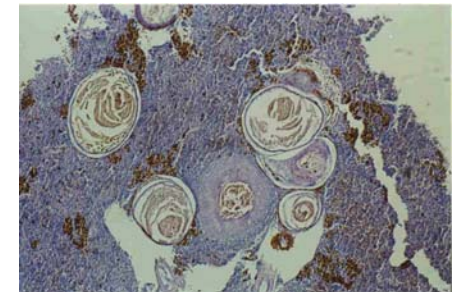
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## Tilapia Wasting

Tilapia wasting disease seems only to affect the Mozambique and blue tilapias. It causes the fish to become very emaciated and lethargic. The head may appear large compared with the body size; the skin may be rough.



Internally the organs are infected with a fungus that slowly, chronically, disrupts the anatomy of the spleen, liver, kidney and even the heart and intestines. The fish tissues fight back by producing minute cysts, trying to encapsulate the growing fungus. Eventually the whole body may be infected and the fish dies.



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## Bass and Tilapia Eye Loss

In the last few years we have been seeing many fishes with diseased eyes. We have not been able to identify the cause of this malady and have tested fishes for bacteria, fungus and protozoan parasites. Although many of the diseased eyes have these parasites, none appears to be the primary cause of the blindness. We continue to examine eyes grossly and histologically to find a cause.



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## Slime Blotch

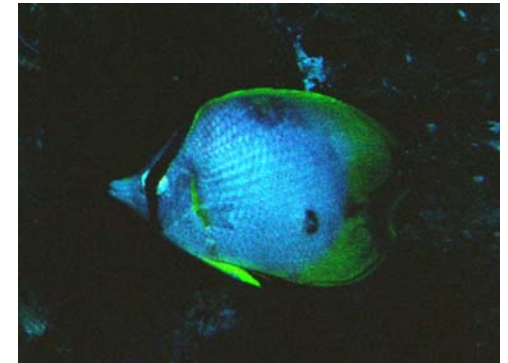


This disease has been diagnosed around the Caribbean on many species of marine fishes including marine sport fishes. It

is caused by a protozoan and other associated micro-organisms that attack the skin of the fish.

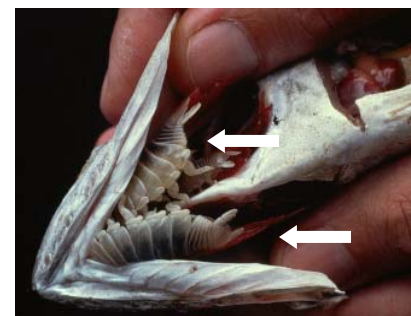
It can appear as a bloody exudate on the skin but more commonly looks like dark blotches on the sides of the fish.

This disease caused large mortalities of marine fishes throughout the Caribbean in 1980 and recently in the eastern Caribbean.



## External Crustacean Parasites

There are many external parasites that can be seen on marine sport fishes.

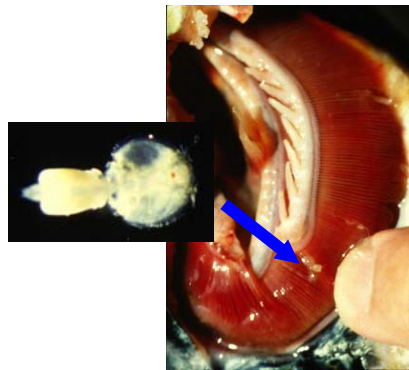
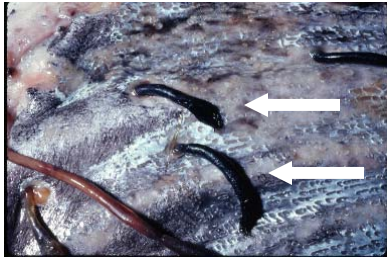
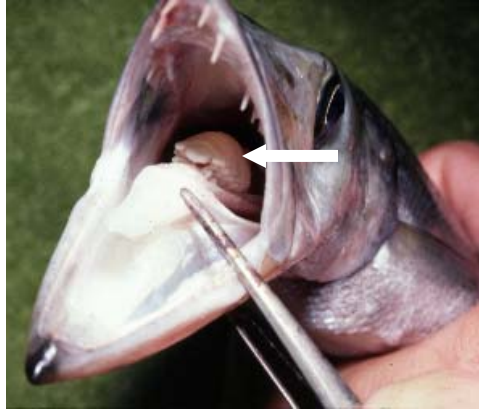


Some have a hard, outer shell and are called crustaceans. They can be very large and fill the gill cavity as seen in the Cero at left

or mouth of the host as seen in this barracuda.

Some penetrate the skin of the fish with the body hanging out like a string as seen below in the dolphin fish. These are called copepods.

Other kinds of copepods live attached to the gill filaments, feeding on mucus and blood. Usually these crustaceans do not kill their host but they must itch!!



## Internal Parasites

The most spectacular internal parasites are these worms, frequently found in the stomach of the wahoo. They are commonly called acorn worms and are a kind of fluke.

They feed by sucking blood from the stomach lining. Usually there are only two worms in each stomach.

Thousands of smaller flukes occur in the stomach and intestine of the dolphin fish. Other internal worms found in marine sport fish include roundworms and spiny-headed worms. Some roundworms can infect humans when the infected meat is eaten in raw fish dishes such as sushi and sashimi.

