

Basic Information on

ICK

Ichthyophthirius multifiliis (freshwater)

Cryptocaryon irritans (saltwater)

Ick is a single-celled creature which goes through several developmental stages before you see the all-too-familiar "white spots." It is a "ciliated protozoan" - a fish parasite which can only survive by feeding on the skin and tissue of fishes. Without a host fish, it cannot survive for long periods.

Ick's first developmental stage cannot be seen with the naked eye. These "swarmers," as they are called, bore into the fishes' gills and outer skin. When you see the little white spots, you are seeing the parasites in their growing and mature stage. They are actually feeding on your fish!

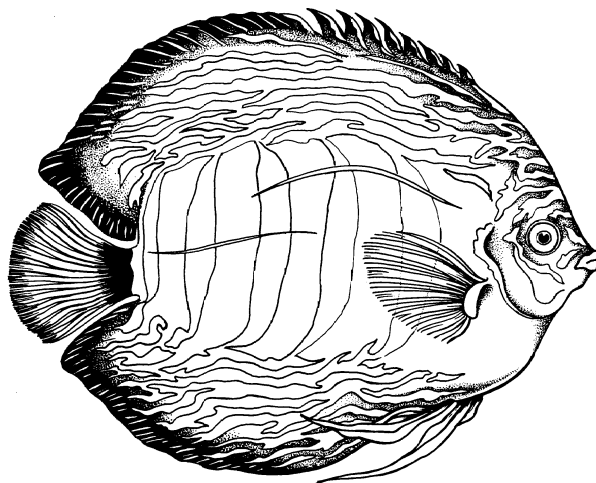
Once these parasites fully mature they leave the fish and become free-swimming once again. Within a few hours the mature parasite becomes enclosed in a cyst attached to a solid surface in the gravel bed. Inside this cyst it separates into many - **1000 or more** - infective offspring. These new swarmers then leave the cyst to find another fish to attack. The swarmers must find a host fish in approximately 24 hours, or they will die!

The warmer the tank water, the faster this cycle will occur. In freshwater, the complete cycle takes about 3 to 4 days at 70° Fahrenheit (at 50° Fahrenheit this period is as long as 5 weeks). *Cryptocaryon* (saltwater) is more dependent on temperatures over 68° Fahrenheit.

What Causes Ick?

Ick is present in almost every tank, all the time, and is "opportunistic" (like the virus that causes the common cold is present all around us and when you're healthy it doesn't bother you, but when your system is run down you are more susceptible to catching a cold!) An ICK outbreak is caused by fairly simple and correctable environmental factors:

- Temperature fluctuations
- Lack of tank cleanliness
- Exposure to weakened or already parasitized fish
- Poor diet



- General weakness of some of the fish in the tank.
- One fish bullying another
- Improper acclimation procedure (see our Fish and Animal Guarantee for more information on proper acclimation)
- Poor water changing technique (See our "Basic Information on Water Changes" handout for more information)

Outbreaks of ick are most common in the spring and fall - the transition seasons. In these months, temperatures fluctuate the most, both in range and rapidity. Tropical fish do not react well to rapid temperature changes, even those within the "safe" range (72° - 82°). An aquarium located in a western window (afternoon sun) or in the path of an air-conditioning vent is prone to this temperature fluctuation.

If the ick outbreak was not caused by temperature problems, the next greatest probability is poor tank maintenance. A dirty tank which has too much ammonia, nitrite, or nitrate in the water will weaken the fish.

"Pecking order" problems and the introduction of new fish can also be a cause of stress-induced ick. The new fish does not have to be sick to cause the problem. Almost every tank establishes some sort of pecking order and the new fish are automatically the "lowest on the totem pole" until they establish their rank. If the lowest fish in the pecking order gets "pecked" a little too much, the stress will weaken it and ick attacks. Once one fish has ick, the entire

aquarium population is at risk.

The last of the common causes of ick is **poor diet**. Most aquarists feed their fish once a day with the same food. A varied diet helps ensure the health of your fish. Three to four feedings a week can be a standard "staple" flake or pellet. Other days mix in spirulina, frozen brine shrimp, or other "treat" foods. Our salescrew would be happy to help you select the right foods for your fish.

How can you prevent ick?

The easiest ways to keep ick away are proper and timely water changes, varied diet, compatible fish, and a heater in every tank. When buying new fish, never buy from a tank showing signs of this disease.

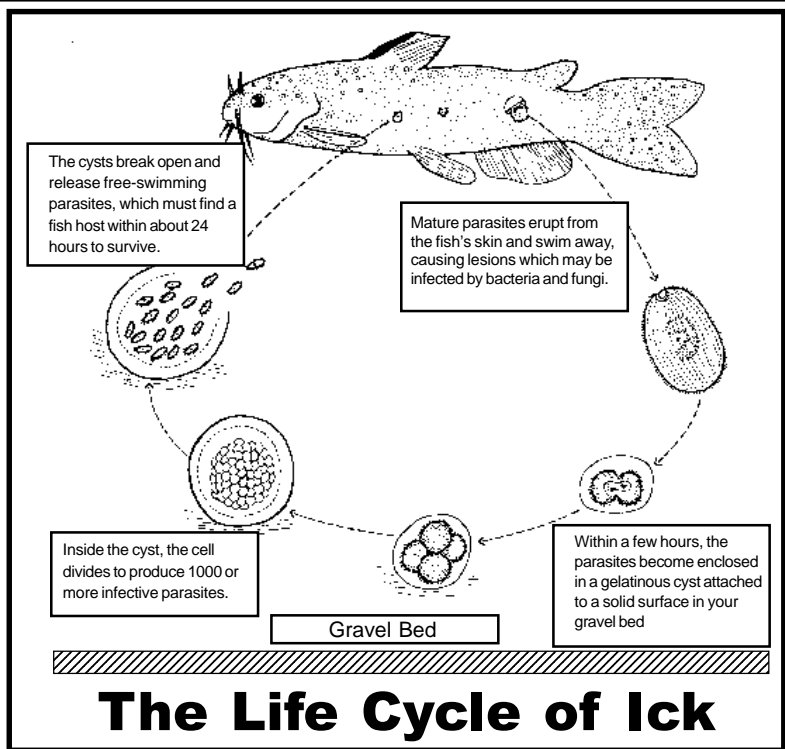
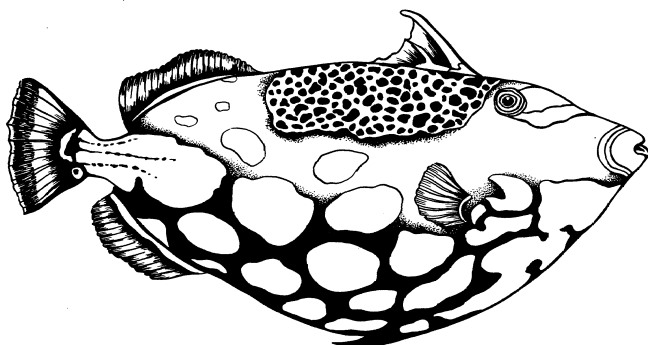
Remember - ick is contagious! Since most aquarists tend to overstock their aquariums, the chances of the fish being parasitized is greater because the "swarmers" can easily find a host. Don't overcrowd!

Ultraviolet sterilization (the passing of water over an ultraviolet light) will also kill any swarmer that goes through it. It is a very good preventative and can help with the cure.

How do you get rid of ick?

As we have just learned, ick is not just a disease of fish - **it is a disease of the tank**. The whole tank is infected with some stage of the parasite. When attached to the host, ick is actually *under* the skin and cannot be treated. Only the free-swimming stage of the parasite can be killed. The use of chemicals (Quickcure - Clout - Maracide - Ick Guard - Aquarisol, etc.) is the most common method of ick cure. Following label directions, removing the carbon from the filter and most importantly, doing a 25% water change with a gravel washer every *other* day for 4 days will normally eliminate the problem.

In a saltwater tank, the use of chemicals (Kent Marine's RX*P - Greenex - Organicure - Copper Safe - Copper Formalin - Copper Sulfate, etc.) is not



The Life Cycle of Ick

as easy as it is in freshwater. Many saltwater aquarists keep invertebrates (shrimp, crabs, corals, anemones, etc.) with the fish. This presents additional problems. The very chemical used to kill the ick will often kill the invertebrates, too. Since invertebrates are not parasitized by ick, they can be separated, so that only the fish are treated. Dosages of chemicals differ - so follow label directions!

When using copper to treat be careful not to overdose since too much copper can kill the fish. A good copper test kit (Aquarium System's Seatest) will allow you to monitor the amount of copper you use. The copper **must** remain in the water for at least 5 to 7 days to get rid of the swarmers.

In saltwater tanks, we HIGHLY recommend treating for ICK in a separate "hospital" tank. Otherwise, depending on the amount and form of copper you use, it can be absorbed by the gravel, or decorative coral. The coral and gravel tend to release the copper *back* into the system when it is exposed to acidic (lower pH) conditions.

There are a couple of ways to eliminate ick without using chemicals. Very fine filtration will literally "filter out" the swarmers. Marineland's Magnum filters use a special micron cartridge that will filter so finely it even filters out microscopic particles! In most saltwater tanks, the addition of a cleaner shrimp - who actually EATS the parasites is a safe and effective solution.

Please note: This handout is meant to provide basic information only. There are several good books available at B&B Pet Stop on the care and maintenance of aquarium fish.