Top Two of Marine Parasites

Sometimes, even when the water quality in your tank is perfect, disaster can strike. The culprit is frequently a parasitic invasion. Just what are these intruders and what can we do about them?

There are many types of fish parasites found in sea water. The two most common and problematic diseases are *Cryptocaryon* and *Oodinium.* They are often called saltwater ich and frequently confused with each other.

Although the organisms causing these two diseases are completely different, their life cycles are similar. A free swimming stage attaches to the host fish. Here it feeds and then forms a cyst. Inside the cyst, the next generation of free swimming parasites develop to be released upon maturation.

Oodinium usually attacks the gills first. This is where the fish is most vulnerable and the cysts are difficult to see. As the disease progresses the cysts become more visible on the outer portions of
the fish but are still difficult to see. Looking down the side of the fish aids in spotting the disease, which looks like a sprinkle of powder.

The gills are damaged by the infestation of Oodinium, causing respiratory problems in the fish. To maintain needed gas exchange the gills pump faster and the fish appears to be gasping. This is usually the first noticeable symptom of the disease. Rubbing (or scratching) across the gravel bed and rocks in the tank is another symptom to look for as an aid in diagnosing Oodinium.

The life cycle of Oodinium takes place in 6 - 12 days. This rapid reproduction allows the disease to spread rapidly and it can quickly take out a whole tank of fish. It is the combination of being difficult to diagnose and rapid reproduction that makes Oodinium the more deadly of the two parasites.

Cryptocaryon is much easier to spot than Oodinium. The infection may begin in the gills or on the body of the fish. Distinct white spots the size of a large grains of salt appear as the imbedded parasites form their cysts. As in Oodinium, rubbing or scratching is also usually apparent.

Although Cryptocaryon reproduces at the same rate as Oodinium, it does not appear to take down fish as quickly. This may be attributed to a higher resistance of fish to Cryptocaryon or because diagnosis is often faster (thus treatment begins sooner).

In Cryptocaryon and Oodinium infections the tank and fish must both be treated. One method of treating the fish is to fresh water dip them. This will explode the spores on the fish. Adjust the pH and temperature of a few gallons of de-chlorinated fresh water to match the corresponding values of the tank water. Bathe the heavily infected fish in this water for 1 - 2 minutes. Watch for signs of shock and remove the fish immediately if this occurs.

The fish can now be moved to a treatment tank that is dosed with a copper solution. There are many commercially prepared solutions available that vary in strength and dosage. Use the directions for proper dosages.

Copper levels change over time. Activated carbon removes copper and some gets absorbed by rock, gravel and detritus. It is best to use a copper test kit to monitor copper levels. A good trick is to check the copper concentration in the tank shortly after the initial dosage and use this as a guide for the proper level to maintain. This will usually be about .15 ppm (may be higher for chelated copper compounds like Cupramine). Maintain effective copper levels for about 2 weeks.

A tank can be treated without copper by using time and temperature. Move the infected fish to a treatment tank. In the original tank increase the temperature to 85 - 90 degrees for 2-3 weeks. The increase in temperature speeds up the life cycle of the parasite. As the cycle runs, the spores all release their free swimming stages which will die without a host. This is especially useful for tanks with invertebrates.

We often treat the fish in the same tank if no invertebrates are present (copper is toxic to most invertebrates at very low levels). If the disease is spotted quickly you can skip the fresh water dip and treat the tank with a copper based medication. There are one or two treatments on the shelves now that can even be used in tanks with invertebrates (excluding corals). Start with a mild dose and observe the reaction of the invertebrates. If everything looks okay then slowly bring the dosage up to the recommendation. On the other hand, if the invertebrates show a severe reaction, do a partial water change to reduce the amount of medication.

Formalin is another treatment for Cryptocaryon and Oodinium that is very effective. It is can be hard on the biological filter and ishould be used with care in new aquariums without well established bio filters. Monitor ammonia and nitrite levels during treatment. Treat at the rate of 1.5 drops per gallon once a day. Continue treatment for several days after all cysts have disappeared. Formalin is hard to buy, but over the counter products like Ich-Out, from Ecological Labs, contain high levels of formalin along with Malchite Green that increases effectiveness.

There is a newer type of treatment now available, such as *Herbtana,* that drive the parasite off the fish and prevent its return, eventually killing them by starvation. Herbtana also boosts the immune system of the fish. Many customers have reported good results and this product is very safe.

There are several methods of preventive treatment for parasitic diseases. They do not give 100% protection against these culprits but they will highly reduce the number and severity of the outbreaks. Each method would require an entire discussion in itself to cover all the details, so a brief description of the three major methods will follow.

Ultraviolet sterilization uses a unit to run the tank water past a fluorescent light of specific frequencies. The frequencies produced kill the small, free swimming stages of Cryptocaryon and Oodinium.

Ozone units produce O^3 (ozone) that is injected into the water as it runs through a containment area (usually a protein skimmer). Ozone kills the free swimming stages of

the parasites. The ozone must return to its original state, oxygen, before the water returns to the tank because it also can be toxic to everything else. Properly designed ozone set-ups must take many factors into account and this will be the topic for another day.

The simplest preventive method brings us back to copper products again. A form of copper that is very stabile and will remain in the tank at effective levels for about 30 days is available. (It can be found under the brand name Coppersafe by Mardel Labs.) This method is limited to "fish only" tanks. A retreatment dose is added approximately once a month or when needed as determined by testing.

This information will help in the diagnoses and treatment of Cryptocaryon and Oodinium. Many diseases are spotted more quickly and treated with greater success as the aquarist gains experience, adding to the enjoyment of the hobby.