

Brooklynella

Brooklynella hostilis is found as a parasite in Marine Aquaria far more often than is commonly recognized as it tends to be overshadowed by the more frequent & well known parasites viz. *Cryptocaryon irritans* and *Amyloodinium (Oodinium) ocellatum*.

Like so many others it is a ciliated protozoan which in many respects resembles its counterpart in fresh water *Chilodonella* (see previous article). When conditions become favorable to its reproduction, very rapid multiplication takes place. Reproduction occurs by simple binary fission, & such massive reproduction can & does cause fatalities, which is brought about by severe weakening of the host fishes.

The literature reports many differing species of fish as being susceptible, & the first reports of this parasite were related by accounts from some of the more prominent (at that time) Public Aquariums, such as the New York Aquarium Steinhart, etc.

Typical signs of infection of *Brooklynella hostilis*:

Water

There is little doubt that fish exposed to lowered water quality , and in particular the stress of elevated Ammonia /Nitrite levels such as are brought about in shipping, can induce an outbreak of this parasite. All the literature seems to confirm this.

Behavior

Fish demonstrate lethargy, will "toy" with their food, appearing to eat and then spitting it out. Respiration becomes difficult as the gills become heavily parasitized, & can easily be observed.

Body

A "faded" appearance of small areas becomes apparent, and such areas spread outwardly as the infestation progresses. Sloughing of the epithelium will occur in later stages.

Gills

Gills will become massively parasitized and a smear or other examination of the gills should easily determine the cause of the infestation.

Skin

As the "sloughing" occurs increasingly large areas of damage can be seen, as the skin becomes broken down by the parasites activities.

Treatment

The literature has very little on effective treatment, and the authors disagree on the application of Copper as treatment, (Stopskopf's book recommending its use, while

Blasiola stating categorically it does not work). In this authors experience I have to agree with Blasiola, I have never found it to be effective against Brooklynella.

The combination of the following treatments & techniques have worked for us, on several occasions with varying degrees of infection, to eliminate the parasite, but we have had to employ at least two of the methods, and often all four. With careful attention the parasite can be brought under control (eliminated), but one should be aware there is no "24 hour" simple cure. Be very suspicious of anyone telling you that they have such a remedy.

- 1) Giving a "dip" in freshwater of the same temperature & pH as the Marine tank, for about 15 minutes (careful observation must be made, during this time, to avoid distress, & the fish removed, if major problem is observed).
- 2) Giving a bath in Sea water with Formalin added at a dosage of 1000 ppm for some 15 minutes.
- 3) Adding an Acriflavine product (such as Fish-Vet's **Revive**) to the tank water for a period of 2 weeks after the above treatments.
- 4) Taking **severe** steps to ensure that water quality is optimum along with the TOTAL removal of any detritus.

If any secondary infections with by bacteria are observed then the use of an antibiotic would be useful. The use of UV to help prevent secondary infection should be employed.

It is useful to point out to the aquarist who is intending to buy fish, that the best way to avoid to problems that this parasite can bring to your aquarium, is through the use of a quarantine tank for at least two weeks. Most fish that will break out due to the stresses of transport , with this parasite will do so within this time. Brooklynella is not an easy parasite to eliminate, so the effort to avoid it is worthwhile.

I suspect that some of you as you read what would appear to be a depressing catalogue of parasites just waiting to attack your precious fish, may become disheartened somewhat, especially if you have had the misfortune to suffer one or more attacks in your early days in the Hobby. Therefore at the risk of being repetitive let me again emphasize that fish have an amazing ability to withstand infections, their immune system like most Vertebrates are well developed, and only when the conditions that we prepare for them or that they are exposed to before we receive them are substandard, can we anticipate outbreaks which will adversely impact their health & our enjoyment of them.

Bibliography.

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