

# BREEDING TROPICAL FISH

By Chase Klinesteker SWAM, July-Aug 2003

This article is the fourth in a series of 5 articles on the subject of breeding tropical freshwater fish. This by no means will be fully comprehensive but will stem from my own experience over a number of years. The success I have had breeding fish has in great part come from the helpful information and generosity of members of the Southwest Michigan Aquarium Society (SWAMAS) and Grand Valley Aquarium Club (GVAC) over the years. The article subjects are:

- 1) Introduction and Some Ways Fish Breed
- 2) Factors to Consider
- 3) Breeding Setups
- 4) **Treating water**
- 5) Reasons for Failure

## 4) TREATING WATER FOR BREEDING

The treatment of water to stimulate fish to spawn is done in many ways. PH (acidity/alkalinity), hardness, oxygen content, and salt are some ways that water is altered. It is my experience that altering water is one of the less important aspects in breeding most fish species. Age, proper conditioning, and fertility seem to be much more important. However, for some species it is necessary to alter the water in order to keep the fish alive and healthy, and that would be needed to breed them. Also, I have a feeling that a number of "very difficult" or "impossible" to breed species of fishes could be related to unmet dietary needs, not water conditions. Many animals and insects in nature are very dependent on a specific plant or animal in their diet and they will not reproduce or survive well without it (e.g. panda and bamboo). Nevertheless, water chemistry can be a factor in breeding for a number of species, especially for getting the eggs to hatch and raising the fry. Freshly drawn tap water seems to stimulate breeding behavior in many fishes when added as a water change. In most cases it is clean and free of fish wastes, nitrates, heavy metals, etc. Fresh water in the form of rain is the stimulus that induces many fish to spawn in nature.

### FRESH WATER

The most frequently successful setup for me in the past, especially for common tetra species, has been a clean 10 gallon tank which contained freshly drawn Grand Rapids tap water of the correct temperature that had set only 2 to 6 hours. The bubbles are knocked off the sides and plastic plants and the breeders introduced. After spawning, the eggs are siphoned out and placed in soft rain (or RO) water with some methylene blue. The dye helps retard fungus but also cuts down on the light that reaches the eggs. Many species of charachoids have eggs that are sensitive to light. Also, the sperm in the water after spawning is highly polluting to these often sensitive eggs, and a water change is recommended anyway. Failure to get viable tetra eggs to hatch is usually related to hard water, polluted water, or light exposure. Also, high aeration on tetra eggs seems to be detrimental. This may be from the increase in PH which aeration causes. I get the best hatches in containers with low or no aeration. Most tetra eggs hatch in about 24 hours and then there is major pollution from the decaying eggshells so the fry should be removed and placed in fresh rain or RO water. In a 10 gallon tank of soft water with a peat box filter and only one pair of spawning fish, the eggs could probably be left in the tank to hatch and partially raise there. Some easy to breed tetra species can be bred and raised in regular tap water (e.g. Buenos Aires, Flame, and Black tetras).

### TREATING WATER WITH PEAT MOSS

Peat moss is often used to treat water to breed many soft water species. It reduces water hardness and releases natural humic and tannic acids that seem to be beneficial to the eggs of

species that come from soft acid waters. Some people question whether the lowering of PH is a benefiting factor. The bacteriostatic and tanning effect on the eggs from peat moss may be more important than the lowering of PH. I have not had much success breeding fish in water acidified with chemicals such as sodium biphosphate, phosphoric acid, and sodium bisulfite. Yet water treated with a peat moss filter usually is beneficial.

The treating of water with peat moss can be done in several ways. If you desire water that is also acid, rain or RO water is best to use. 10 or 20% of that water should be tap water with minerals so that some minerals are present, since totally pure water may adversely affect the fish. Canadian Sphagnum peat moss is the best kind to use. Sometimes lime is added to make it more suitable for gardening, which would not work for our purposes. To check for that, let some stand for a few days in pure rain or RO water. The correct peat will turn the water a dark brown (tea) color and make it more acid. The easiest way to treat the water is to put the peat moss between layers of filter floss in a small box filter. Add some large gravel over the top layer of floss to weight it down and keep the filter on the bottom. Within a day or 2 the water starts turning amber, depending on the size of the tank and the amount of peat moss. A small handful for a 10 or 20 gallon tank would be a good start. I don't recommend using peat treated water on live plants unless the light is very bright and the peat treatment is mild. The dark colored water reduces the light available for the plants to grow and flourish, although floating plants would be OK. One must monitor the PH if a peat filter is used in very soft water since the water can become very acid quickly. Do a water change and remove the peat filter if PH levels get too low. Many killiefish will benefit from peat moss treated water and their eggs are better off.

Another method used to obtain soft acid water for breeding characins is to use a separate tank to prepare the water. Scalded peat is put 2-3 inches deep in the tank and rain or RO water is added. After a period of time the water will become soft and acid and can be used in a breeding tank. A nylon bag of peat moss could be hung in an existing aquarium to partially treat the water but the fine particles in the peat make that fairly messy. There is a commercially prepared "Blackwater Tonic" that is an extract of peat moss that could also be used. Wood or oak leaves are sometimes used to treat water by some aquarists. In general, I don't recommend special treatment of water for breeding tanks unless the fish must have it. It doesn't hurt to try fresh tap water first for breeding most species.

## **OTHER WAYS TO TREAT WATER FOR BREEDING FISH**

Adding some salt can benefit a number of species that might be from coastal areas or regions that have hardness in the soils. Pufffish, gobies, livebearers, and other groups have species that can benefit both in health and breeding from the addition of some salt to the water. Individual needs can vary so it is best to consult information on each species. African cichlids do better in hard, alkaline water because that is the water type they come from. Seashells and dolomite (limestone) gravel in an aquarium will add hardness and alkalinity to their aquarium. High oxygen content and current (heavy aeration) can also be a stimulus for species like corydoras catfish, which breed during the rainy season. There are many other ways that water could be treated or altered in trying to breed fish.

In conclusion, it is helpful to become aware of water conditions that exist in the natural habitat of the fish you are trying to breed. However, Most species of tropical fish are quite adaptable and we may be wasting much time and effort trying to get the "perfect" water for them. Those species that require water treatment to just keep them alive for a period of time are in need of special water treatment for breeding also. I recommend proper conditioning and clean, fresh water in attempting to breed most species. If that fails, treating the water may then be indicated.