

# BREEDING TROPICAL FISH

by Chase Klinesteker SWAM, May-June 2003

This article is the third 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 many 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

## 3) BREEDING SETUPS

Many of the suggestions in this article will pertain to egg scattering species of fish and in particular Tetras, with which I have the most experience. There are many ways to set up breeding tanks to encourage fish to spawn. The main reason for setting up a separate tank is to be able to collect the eggs or fry before they are eaten by other fish. Another reason is to give the spawning fish privacy and a "comfortable" environment. What is comfortable for a fish can vary with the species and we may not fully understand what produces comfort for them. Probably the most significant sign is how they act in the new setup. Are they swimming around, actively searching for food, and showing breeding behavior soon after introduction into the tank? These are signs that your fish are comfortable. If they are hiding, sitting on the bottom, or gasping heavily, they are not comfortable. In fact, if there is any gasping, get them out right away—water chemistry changes have been too great! Most species of fish will adjust and show signs of being comfortable within 15 to 30 minutes of introduction, although there is a great difference in shyness in species that must be taken into consideration.

Observe your fishes after a water change. Note that the greater the percentage of water changed, the longer the time needed for an adjustment by the fishes before they are back to normal. This may only take a few minutes, but if a large percent is changed from the tap, the fish may not act and eat normal for several hours. Yet a small water change (eg 30%) can stimulate the fishes in a community tank to greater activity, feeding, and spawning behavior. Another factor in their comfort is cover, light intensity, and background darkness. Fish feel more secure in a darker environment when frightened. Moving fish to a new tank is a stress in itself. An ideal spawning tank might be one with similar background and cover as the community tank the fish are in but with less light intensity, using 70% water from the community tank and adding 30% fresh. One of the benefits of using peat moss extract or filters is that it cuts down on light intensity. Think of it as providing the "candlelight mood" in the fish world!

### STANDARD SETUP

This is probably the most common way fish are set up to breed. A bare clean 5 or 10 gallon tank is filled with clean tap water. A mat, moss, mops, or plastic plants are placed in the tank for cover and areas for the fish to lay eggs so they will not be eaten. Sometimes the tanks' bottom, sides, top, and back are covered with black plastic to cut down on the light for shy species. This applies to many tetras especially. A flashlight is used to check on the fish. I will mention that some fish can be stimulated to spawn by early morning light or sun also. Often, knowing the fishes' natural habitat will give a clue (e.g. blackwater shaded streams vs. lakes and streams in open country). There are likely many fish that either approach will work on so it is best to check it out. A temperature about 75-80 degrees will probably work on many species but that should be checked out for individual needs. A sponge or box filter usually works well. This setup will work for many easy to breed species of tetras, barbs, and danios. Special water treatment can be used with this setup for more difficult species, which will be gone over in a future article. For those

with limited space, using an opaque plastic divider in a 10 gallon tank will allow 2 species to be set up in the same tank. Since my average success rate is about 10%, the more fish I set up to breed, the greater the chances of a successful spawn. If you expect success every time, you will probably be disappointed in breeding fish. Stick with easy to breed species to improve your chances. Black tetras, flame tetras, Buenos Aires tetras, glowlight tetras, head and taillight tetras, zebra danio, golden danio, leopard danio, rosy barbs, checkerboard barbs, and cherry barbs are a few of the easier to breed species of tropical fish.

### **PLANTED SINGLE-SPECIES TANKS**

A natural setup with gravel and thick live plants is sometimes used for different species of egg-scatterers. This is usually attempted over a longer period of time, and when fry are seen appearing among the plants, they or the parents are removed. Heavy floating plants are helpful for the fry to hide in (e.g. water sprite). A good-sized tank and only a pair or two of breeders are recommended to reduce fry predation. The breeders are fed live and frozen foods carefully to keep water quality high. This setup is more difficult with species whose eggs require very soft, acid water to hatch. Peat moss treatment cuts down on light so many plants won't grow, and soft acid water is not good for most species of plants. If effective bottom feeders (e.g. barbs) are put in this setup, most eggs and fry would probably not survive. Some groups of fishes this setup might work on would be rainbows, danios, killiefish, pyrrhulina, bloodfins, and white clouds. Smaller numbers of fry result but then we don't all need hundreds of fry at once!

### **CONTINUOUS "COMBO" SETUP**

This is a setup of a number of species in one bare-bottomed community tank for egg-scattering fish. An "island" of thick plastic plants (plastic are easiest, sorry Harry!) is put in the center of the aquarium with no other cover or plants in the rest of the tank. This is where the fish will lay their eggs if they breed. The plants can be contained by placing a layer or two of large gravel (3/8 to 1/2 inch) inside a one quart plastic sherbet container (sherbet removed!) and jamming the plant bases into the container. Because the plants are so thick, few fish will get down to the gravel to eat the eggs. Place several pairs of different species of fish that will not cross-breed which you wish to breed in the tank, feed them well, and do frequent water changes to stimulate breeding. To check for eggs, place a small air hose "siphon-on-a-stick" down into the gravel and remove a small amount of water every day or two. The eggs can be seen by placing the removed water in a clear or opaque pan and shining a flashlight through the bottom. If eggs are found, siphon the pan more thoroughly and hatch them separately. Even more difficult fish can be attempted with this method because the eggs can be placed in soft acid water after collecting. The hatch rate is usually much better for these species, though, when the eggs are both laid and hatched in the soft acid water. Unless the different species of fish have different size and color in their eggs, you will have "mystery fry" for a while until they grow large enough to identify species! This is the solution for all those people that tell me: "my neons, rasboras, and tetras all spawn in the community tank but the eggs get eaten before I can get them out, and when I throw the breeders into a breeding tank, they stop laying eggs". A modified version of this setup could be tried in an existing community tank if the pan of plants was the thickest cover in the tank. However, corydoras, plecos, loaches, and barbs in the tank might considerably reduce the eggs found.

### **ONE GALLON JAR**

Glass gallon jars can be used to breed small species of fish if proper conditions are maintained. Killies, mosquito fish (Het. Formosa), pencilfish, pigmy corys, etc. can be placed in them. Usually only single pairs or trios are used. Water quality is maintained by doing 90% water changes twice a week of aged water from a reservoir. At least a bubbler or better yet a small foam filter is used in each jar. Pieces of plastic plants for cover and a layer of large gravel on the bottom to protect the eggs is helpful. Treated or acidified water can be easily used and great quantities are not needed. A section of black plastic can be put behind the jar to give the fish a darker more comfortable environment. Small feedings of live baby brine shrimp can give more time for the fish to acclimate to their new surroundings. The "airline siphon on a stick" is used to check for and collect any eggs.

### **LIVEBEARER NET**

This is a simple and quick method to save babies especially if you don't have extra tanks. Take a large fishnet approximately 7X10 inches and net the female livebearer into it. Then fill up the top and bottom of the net with fine leaved plastic plants so the female can move around in the middle. Leave the net in the community tank and rest the rim on the edge of the top of the tank, covering it with glass or plastic. In this way the pregnant female is not taken out of the water to possibly cause premature birth or injury to her. Pregnant goodeid females are especially sensitive to removal from the water in a net. After the fry

are born, remove the female and the plastic plants and you have a netfull of babies! I do not recommend leaving the babies in the net in a community tank for very long. The larger fish in the tank become very skilled at sucking the babies through the net, even though they appear too big to go through the mesh! This breeding net has also been tried for breeding some egg layers that are avid egg eaters. The net and breeders are placed in a bare tank and the eggs are siphoned off the bottom after spawning.

### **SINGLE SPECIES SUCKERMOUTH CATFISH**

Royal whiptail catfish, stickfish (*Farowella arcus*), dwarf bristlenose catfish (*ancistrus*), and rinoloricaria all seem to prefer darker surroundings and some driftwood to chew on. I believe they are mostly nocturnal so I didn't use lighting above their tank. Some (*ancistrus*) spawn in caves yet others (*Farlowella arcus*) laid their eggs right on the front glass. Most can be spooked easily so I think that a single species tank is best. With other fishes present, they often don't get enough food, yet they need heavy feedings to condition for spawning. Because they are slow eaters, I often will add snails to help them clean up the excess food. Besides the wood, some vegetable matter (e.g. zucchini), spirulina flake, and frozen brine shrimp are fed to round out the diet. I usually will siphon out the fry to move and feed them separately, as my experience has been that the fry will slowly die of starvation if left with the parents.

### **MANY MORE WAYS**

The list of options for different breeding setups can be as long as your imagination and the many species available to the aquarist. Don't be afraid to try and breed species that are said to be difficult or not bred yet. With over 1200 species of just characoids alone, the opportunities are endless, and many have probably not even been attempted.

Breeding setups are important, but it must be remembered that most important is the condition, age, health, and fertility of the breeders. More often than not, failure to breed fish is a result of the breeders not being ready to breed rather than the conditions of the breeding setup. Trying different breeders often gets results in the same setup. The next article in this series (#4) will talk about how different water conditions can be obtained for breeding different species, especially some of the more difficult ones.