BREEDING TROPICAL FISH

1)Introduction and some ways fish breed

By Chase Klinesteker SWAM, Jan-Feb 2003

This article is the first 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 will be:

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

INTRODUCTION

I will begin by saying that most people reading this have probably bred neon tetras! In fact, if you have kept them for any period of time, you have likely had them breed in your community tank. I constantly hear people say they have observed neons laying eggs in their tank but the other fish eat the eggs before they can get to them. In many instances, getting fish to lay eggs is not the problem. It is collecting the eggs, hatching them, and raising the fry that is the challenge. I enjoy breeding tropical fish because it provides a challenge, the variety of species is endless, it is very interesting, and I can help preserve species and lessen the impact on wild fish populations. The rewards are many, including acquiring new species to breed from trading or selling what I have bred and their fry at auctions.

Breeding fish is hit or miss! For most fish, I will set up for breeding 5-10 times for every BAP species I get credit for. There are always many more failures than successes. This is expected and provides the challenges and rewards derived from breeding. If every try were successful, few would be motivated to breed fish.

One of the most important factors in successful breeding of fish is to be very familiar with the species you are trying to breed. This includes their native habitat, water conditions, food requirements, breeding habits, and best temperature for breeding. I recommend having some reference books available to look up information. If you don't have them, the club library and Internet can be good sources. Some books I have used include Innes "Exotic Aquarium Fishes", the Baensch Atlas Series, The Axelrod Encyclopedia, Axelrods' Exotic Tropical Fishes (looseleaf), "Breeding Aquarium Fishes" by Axelrod (5 book series), "Freshwater Fishes of the World" by Sterba, and "The Larousse Guide to Aquarium Fishes" by Klaus Paysan. Another good source is tropical fish magazines with articles on breeding. I never take any one of these sources as the final word. Many sources conflict in their information. Often a species can be bred under a variety of conditions. By reading a number of different sources about the same species you get a good feel of what it might take to breed that fish. From that you formulate your own approach. It then is YOUR breeding success, not someone elses'. Less of this research needs to be done for easier to breed species, but it is helpful in any case.

WAYS THAT FISH BREED

There are many ways that fish reproduce. Following are some ways that fish may be grouped:

LIVEBEARERS

These fish have their young born alive. From guppys to goodeids there is great variety. Water conditions and diet can be very important on the more difficult species. Most require some hardness in the water. Some are strictly carnivores (e.g. belonosox) where others (e.g. Mollies) require vegetable matter in their diet to reproduce. Some goodeids will bloat and die from too much protein (e.g. frozen brine shrimp) being fed. The more difficult species often are very sensitive to nitrate wastes in the water and need frequent water changes to breed successfully. Some are from brackish or mixed salt and fresh water and adding some salt is important. Some are so efficient fry predators that it is difficult to get fry (e.g. Some Brachyraphis).

EGG SCATTERERS

This group is one of the largest and includes tetras and the cyprinids (barbs, rasboras, etc.). These fish scatter eggs over the bottom or in plants. Many will eat their own eggs, so plants, marbles, or a breeding trap is helpful. One of the easiest of these to breed is the zebra danio. Some of the easy to breed tetras are black tetra, flame tetra, and Buenos Aires tetra. These fish can lay hundreds of eggs and a large tank is needed to raise the many fry. Barbs are avid egg eaters and extra plant cover is usually needed to hide the eggs and protect the female from getting hurt.

MOP SPAWNERS

This group includes many of the killiefish. They lay eggs in heavy plants or nylon mops. A dark colored mop is usually most accepted. I like to hang them from the top of the aquarium with a stainless steel wire to keep them in one place and at the correct level. Many species will dive deep into the mop to lay their rather large eggs, often one at a time. Rainbowfish are also mop spawners. Because they do well in community tanks, often all that is needed to spawn them is to place a mop or two in the community tank and check the mop every couple of days. Hand picking the tiny eggs and hatching them separately has worked well for me. I also consider many corydoras catfish to be mop spawners as they will often lay their very adhesive eggs deep in a mop.

BUBBLE NEST BUILDERS

This group includes bettas, gouramis, paradise fish, and some catfish (e.g. Hoplosternum). The nests vary in size and how they are constructed. Most are on the surface but some species (e.g. Licorice gourami) make an underwater bubble nest in a submerged cave. The male usually takes care of the eggs and fry---until they become free swimming and then he may start eating them! Warm temperatures and not much water current or aeration can encourage breeding in these fish. The fry are often tiny and may need infusoria or Liquifry as a first food. Around 80 degrees F. or slightly above is a good temperature for breeding many of these fishes.

MOUTH BROODERS

The largest number of these fish come from African lakes. Included are Haplochromis, Melanochromis, Pseudotropheus, and Labeotropheus. Many of these fishes are very aggressive to both conspecifics and other species. The challenge is to have a large enough tank with enough rocky hiding places so picked on fish can get away and hide. Another trick is to have the population heavy enough so the bullies are always looking out over their shoulder, for the next bully! You can easily tell when these fish have bred by the females having a mouth full! After about 7 or 8 days, it is quite a thrill (and skill) to hold the female in your hand and gently pump the fry out with a toothpick! Some anabantoids also are mouthbrooders (eg. Chocolate gourami and Betta picta). With Betta picta, the male holds the eggs in his mouth and is very reclusive. He should have lots of secluded cover in which to release the fry.

SUBSTRATE SPAWNERS

This group includes many South American cichlids (e.g. Cichlasoma) that lay their eggs on a rock or clean out a pit in the bottom on which to lay their eggs. They often very aggressively defend their eggs and fry. Sometimes "dither fish" that are fast and peaceful will activate spawning because the male is distracted from severely beating up the female. Many of these fish prefer an open area for a nest because it can be defended more easily.

CAVE SPAWNERS

This group includes South American cichlids (e.g. Apistogramma) where the smaller female takes over the care of eggs and fry, even to the point where she may kill the male! A small opening to the cave is preferred, and a small overturned pot with a hole just big enough for the female to enter is best. I usually remove the pot with the eggs attached and hatch them separately, as their eggs usually need soft acid water to hatch. RO water with methylene blue usually allows for a good hatch. Sometimes I think the parent eats the eggs only because they are not hatching. There are numerous other cave spawners, including some African cichlids, plecostomus, and the sailfin characin.

In the next article in this series I will discuss environmental and other factors to consider when breeding fish.