BREEDING TROPICAL FISH

by Chase Klinesteker SWAM, Sept-Oct 2003

This article is the last in a series of 5 articles on the subject of breeding tropical freshwater fish. This by no means is 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**

5) REASONS FOR FAILURE IN BREEDING

Tropical fish live in varied and complicated environments. Sometimes we try to simplify a reason why we failed to breed a species when there were many factors involved. Other times there can be a simple factor that we failed to recognize (e.g. the breeders were infertile) and we grow frustrated trying to attain just the "right" conditions. We are lucky that reproduction is a primary function of all animals and that most will breed under a variety of conditions. With fish, fertility, a high quality diet, and clean fresh water are essential basics that must be considered before anything else. If we ignore any of these 3, we will experience many breeding failures.

INFERTILITY
This is #1. Without fertile breeders we won't get fry no matter what we do. Don't confuse the unhatched eggs of a young pair of cichlids that needs to spawn a time or 2 more to "get the hang of it" with an older pair that can't spawn. Often age, poor diet, and long exposure to polluted water will render fish infertile. Some species are more tolerant of that than others. Pair incompatibility could also be a factor and switching mates can sometimes lead to success. All animals can reach an age at which they are too old to breed. Usually in a harsh natural environment few live long enough to become aged. But under excellent care in an aquarium, they often live longer than in nature. Commercial fish farms often get rid of their breeding stock by the time they reach ½ their life expectancy due to a reduction in fertility. Younger breeding stock usually always results in the best and most vigorous fry.

It is very difficult to determine if fish are fertile or not unless you know they have recently bred. In purchasing fish, it is very important to observe their age and overall health status. Stunted, thin, or stressed out fish should not be purchased. Young, robust, well fed specimens with erect and intact fins are desired for breeding. If possible, obtain a young group of 6 or 8 fish to grow up together. With difficult-to-breed characins from soft acid waters, it is best to select newly imported fish for breeding. It

is believed that some of these species become sterile after only a few months of being kept in (hard) tap water.

POOR QUALITY DIET

The lack of proper nutrients needed for developing eggs and sperm and fish health is a major cause of breeding failure. In many species, feeding only dry food will not obtain the desired results. Protein in the form of live foods or fresh or frozen meats has the best vitamins and protein building blocks for top health and reproduction. Most fish require at least some protein in their diet. Even the dwarf bristlenose catfish will benefit from some protein (e.g. frozen brine shrimp) added to their vegetarian diet. A variety of foods is best. Some fish will not breed unless fed some live foods.

The frequency of feeding and the amount of food are also important in conditioning fish to breed. For fish as well as people, it is better to eat smaller meals more frequently than to gorge on food less often. Feeding fish small amounts 2-3 times a day encourages breeding. When fish gorge on food, digestion is not as complete and much more polluting waste is released into the aquarium, affecting the fishes environment. I find that when I can only feed my fish once a day (and I tend to overfeed), very little breeding takes place.

POOR WATER QUALITY

Water quality is very important. The most effective "trigger" to get most fish to spawn is to do a water change. A portion of the old polluted water is removed and fresh clean tapwater is added. This simulates a fresh rain or the rainy season in nature which is when many species breed. In the dry season, fish become more concentrated, water is more polluted, and life is more difficult. When the rains come, large areas are flooded and the fresh clean water stimulates the growth of zooplankton which can feed baby fish. This doesn't happen overnight in nature. Sometimes we expect fish to breed for us after one water change, when what is needed is a series of daily or every other day water changes over a longer period of time.

Improper water chemistry for a species can be considered poor water quality also. For instance, we would not put most african cichlids in soft, acid water or tetras in hard, alkaline water and expect them to breed. In either case the water could be clean and pollution free, but not good water quality for the species considered. However, sometimes we get carried away with water chemistry details when just a general consideration is required.

OTHER REASONS FOR BREEDING FAILURES

Temperature can sometimes be a factor. Many fish breed at slightly higher temperatures than normal, although just a change may be what triggers the fish. The rainy season may have the effect of cooling on temperatures as is seen with the spawning of corydoras catfish. Changing temperatures both up and down might be tried on a stubborn species.

Not giving the breeders enough time to acclimate to their spawning tank could cause failure. Sometimes I have been too anxious and moved the breeders around too frequently. Shy species may need a few weeks or more to get use to their surroundings.

A bare or brightly lit breeding tank does not foster easy adjustment for many species. Low lighting, cover, and proper spawning media or surfaces can make the adjustment period shorter (romantic music may not be necessary).

Using eggbound females is common, especially in tetras. These fish look like they will "pop" any minute but they are unable to lay any eggs. At some point the eggs will be resorbed, dropped, or the female may die. Avoid the super fat fish for breeding.

Check your breeding tanks for eggs frequently, twice a day if possible. Many times I have missed seeing eggs in time before the parents eat them or water conditions make them infertile. I usually remove the eggs and put them in hatching tanks with high quality water and fungicide (methylene blue). Some fish are very secretive in their spawning (e.g. Uaru) and I did not notice eggs until after several spawns. Use a flashlight to search for eggs. Cichlid eggs can be siphoned off a surface without removing rocks, etc. from the tank.

Too much or too little areation can be detrimental. Corydoras catfish are aided in their breeding by heavy areation. Yet many tetras from lakes or slow flowing streams prefer still water.

IN CONCLUSION

Failing to breed some fish may be out of our control, but the more one learns about each species and their environment, the better chance we have of breeding them. Concentrating on the 3 main factors (fertility, good diet, and water quality) is basic to breeding all species of fish. Breeding tropical fish is fun, interesting, and rewarding to those who persist.