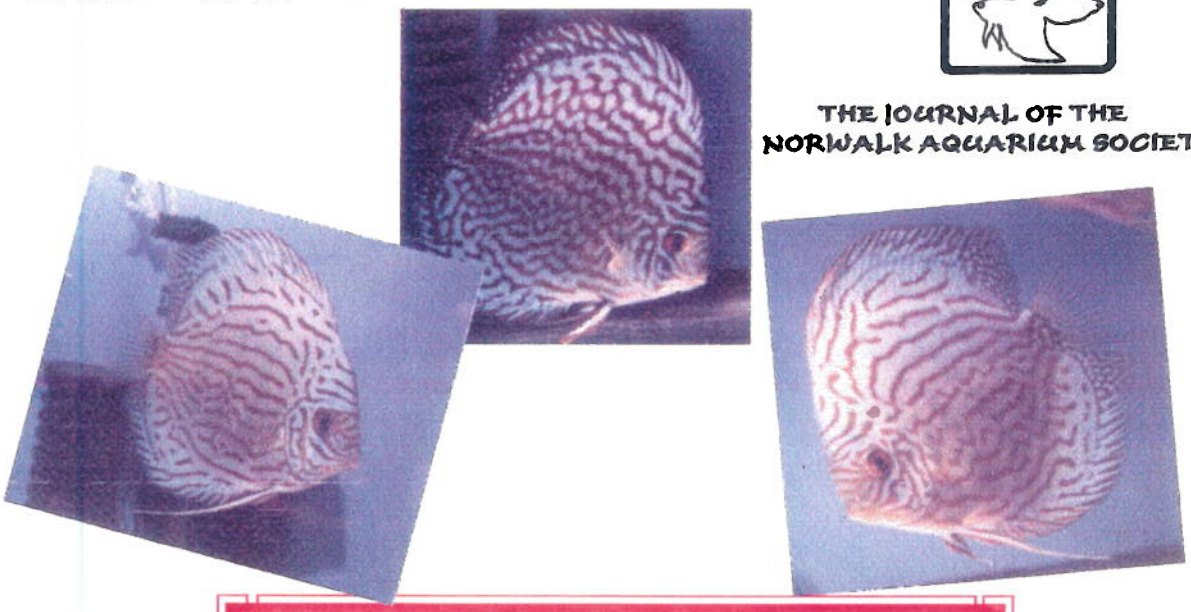
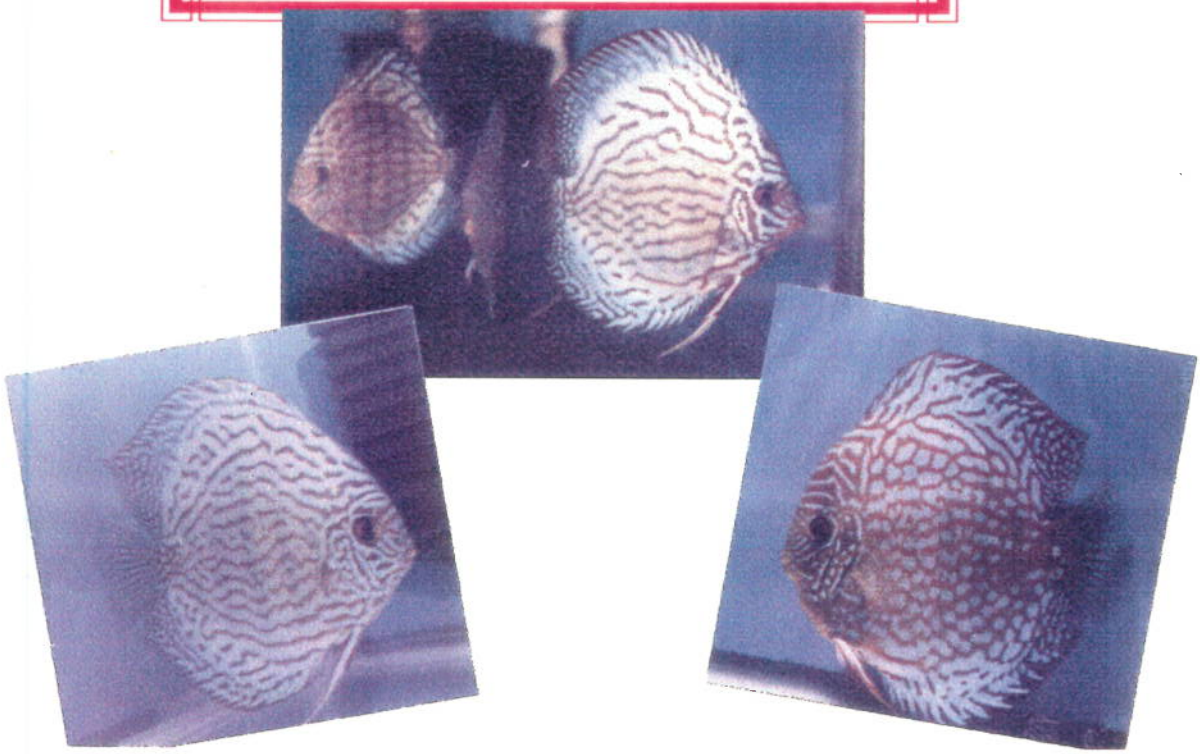
THE WET PET GAZETTE

MARCH & APRIL 1998

THE JOURNAL OF THE
NORWALK AQUARIUM SOCIETY



WELCOME BING SETO



BING SETO OWNER OF DISCUS WORLD WILL BE OUR MAY 21st GUEST SPEAKER
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FROM THE PRESIDENT'S DESK

WELCOME TO THE FIRST BI-MONTHLY ISSUE OF OUR WET PET, WITH OUR NEW EDITOR CHARLIE GRANDEL. MUCH THANKS TO MARK BROADMEYER, FOR ALL HIS HARD WORK AND LONG HOURS SPENT AS PAST EDITOR OF THE WET PET.

ANY ARTICLES OR INFORMATION FOR THE WET PET SHOULD BE SENT TO CHARLIE VIA "E-MAIL" (ChasDiscus@AOL.COM) OR GIVEN TO CHARLIE OR MYSELF AT A MEETING.

I HOPE EVERYONE COMES OUT TO HEAR BING SETO SPECK ON DISCUS. BING IS SPONSORED BY GINGER PRODUCTS AND SAN FRANCISCO BAY BRANDS. COMING ALL THE WAY FROM CALF.TO SPECK TO US , AND EVEN BRING SOME OF HIS BEAUTIFUL FISH FOR OUR AUCTION.

IT IS OUR GOAL TO BRING IN THE BEST SPEAKERS EACH MONTH SO PLEASE COME OUT AND **SUPPORT YOUR CLUB.**

SEE YA 3rd THURSDAY

BASIL

UP COMING PROGRAMS

1998

February 19	Sal Silvestri, Apisto's
March 19	Jim Duncan sponsored by Lifeguard on Ponds
April 16	Dan Katz, Killies
May 21	Bing Seto sponsored by San Francisco Bay and Ginger products on Discus.
June	Setting up a Saltwater tank
July	No meeting
August 20	Lee Finely, catfish
September 17	Basil Holubis, What to do in case of a black out!
October 15	Home Show viewing and Presentations
November 19	To be announced
December	No meeting Happy Holidays!

NOW IN OUR 48th YEAR

NORWALK AQUARIUM SOCIETY

IN THIS ISSUE

THE COVER PHOTOS ARE BING SETO'S, SOME REALLY NICE LOOKING FISH!! THANK YOU BING, FOR SENDING THEM TO ME.

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NORWALK, CT 06856

REGULAR MEETINGS AND PROGRAMS

There are regular meetings on the third Thursday of each month except July and December. Meetings are held at The Nature Center for Environmental Activities, 10 Woodside Lane, Westport CT. Meetings start at 8:00 PM. Each meeting includes a short business meeting, program or fish event, door prizes, raffles, auction, and refreshments. All regular meetings are open to the public

REPRINT POLICY

WET PET GAZETTE EDITORIAL POLICY

The views expressed in this publication are the views of the author(s), and are not necessarily the views of The Norwalk Aquarium Society.

STATEMENT OF PURPOSE

The Norwalk Aquarium Society is not for profit, all volunteer organization, dedicated to the advancement and promotion of the aquarium hobby.

Beginner Aquatic Gardener's Guide

Written by Bruce Watts

Reprinted from the July - August 1994 edition of the Aquatic Gardener Journal of the Aquatic Gardeners Association

Introduction

The purpose of this guide is to help the beginning aquatic gardener achieve success with aquarium plants. Although growing aquatic plants is not difficult there is a lack of information that causes many beginners to fail. So many times plants are added to aquariums as an afterthought with no idea of what their requirements are. The uninformed aquarist soon sees their plants deteriorate and thinks plants are hard to grow. This guide will point out the reasons for failure, but more importantly it will start you on the road to success.

By following the principles laid out in this guide you can have a beautiful planted aquarium like the ones you have seen in books or magazines. An aquarium that is not only attractive to look at , but is also a healthy environment for your fish to live and reproduce in.

Problems Beginners Must Overcome

Why don't my plants grow? I am asked this question often. I have had some success with aquatic plants. When other hobbyists see my planted tanks they want to start an underwater garden of their own. On the surface why don't my plants grow seems a simple question. The answer can be both simple and very complex. Let us examine the reasons why most beginning aquatic gardeners fail.

Most beginners set up their aquarium and notice that something is missing. The water and the fish are in the tank, so why not add a few plants. The plants don't usually last very long and make a mess of your aquatic environment. This is three reason for all those plastic plants at your favorite pet shop. If you would like to try the real thing again you must do some planning before you buy.

Almost all beginners start out with a community tank and almost all of these tanks have undergravel filters. On top of the filter plates you place about an inch or so of course gravel. If the salesman at the store is doing his job he will recommend the medium to coarse gravel because they won't clog the filter plates. Unfortunately, this represents two of three problems the beginner must overcome to achieve success with aquatic plants. The three basic problems are : improper filtration, inadequate substrate and insufficient lighting.

An undergravel filter is a poor choice for rooted plants. Even if our plants thrive, the roots would clog the filter plates making your filter much less effective. If you were to place a deep layer of fine gravel on your filter plates your undergravel would be almost useless. This does not mean that you can not use an undergravel filter to grow plants. I will talk about their use, and limitations, in the article on filtration.

The wrong size gravel is another problem for most beginners. The medium to coarse grades are not good for rooted plants. It is #2 or #3 gravel. This is 2mm or 3mm in size and allows your plants to root properly. The gravel or substrate from 3 - 4 deep for larger tanks and 2 or so for smaller aquaria. The reason for extra substrate is to allow room for the roots of your plants to grow. Aquatic plants are not that different from their terrestrial neighbors. If you plant your house plant in a pot that is to small its growth will be stunted. One other note on substrates. There are products on the market designed to be added to the lower layers of your gravel to promote plant growth. I have used these products and I recommend them. Obviously these products are designed to be used before your tank is set up. I will talk more about gravel additives and plant fertilizers in the article on substrates.

Probably the most common reason for failure with aquatic plants is insufficient lighting. It has taken many years of trial and error to drive this point home. If you don't provide your plants with enough light you will eventually fail. It is unfortunate that almost all aquariums sold in the USA have insufficient lighting for plant growth. The fluorescent bulb in your stripe light is most likely one designed to bring out the colors of your fish. In the article on lighting we will explore the various types of light bulbs and the best way to use them.

Before I understood the three problems above, I failed all my attempts to grown aquatic plants. this introduction lists the three of the simple problems. We will look into many other phases of aquatic gardening in the months ahead, but I promise to keep it simple. In the end, I hope, that you can turn that fish tank into a beautiful underwater garden.

KEEPING DISCUS - MADE EASY

By BILL CURTIN

HISTORY: Discus fish, king of the aquarium, are both beautiful and fascinating to the hobbyist. Discus fish were introduced to the United States and Germany in the early 1930s. The price of the first specimens available was approximately $50 apiece. The first report of successful breeding came in March of 1934 by Gustav Armbruster of Philadelphia. Out of several spawns he was able to raise 35 fry.

The advent of reliable air transportation in the 1950s riggered the onset of Discus keeping. A decade later, Jack Wattley made his initial trip to the Amazon to collect the breeding stock instrumental in the development of the turquoise Discus. In 1968, Carroll Friswold of California wrote a book entitled "Anyone Can Raise Discus." He discussed the method of artificially raising Discus. In the 1970s, advertising in aquarium magazines touted all kinds of strains of Discus with prices in the $15 -$20 range for quarter-size fish. The '80s and '90s brought international interest in the fish with the origination of several specialty societies.

BUYING THE FISH: This braes history of Discus now complete we will now discuss the buying and keeping of Discus. First, I would like to say that in the aquarium hobby, there are may ways to keep and raise fish. Anyone who states "this is the only way to do it" is not worth listening to. Ask several people and form your own ideas. Following that statement, I feel I must add my own disclaimer: I'll discuss what works for me, but bear in mind that it is not the only way to keep Discus. Ask around for a source for the fish. There are several reputable Discus breeders in the United States and shipment through the airlines is easy. Also, look for a breeder in your area and visit the hatchery.

When picking out Discus, look for active fish. They shoud be bold and should come to the top of the tank when you put your hand over the top. They should have round bellies and bright eyes. (Note: A baby Discus will have a red or yellow iris. If the fish in not healthy, the iris will be very dark.)

The color of juvenile Discus is a very controversial topic. A Discus fish will not show much color until it reaches silver-dollar size and is not fully colored until it is 4 or 5 inches. A quarter-size fish that is solid blue is not normal as it has probably been fed hormones to accelerate the fish's color development. This practice can damage the fish's ability to reproduce.

CARE: Young Discus are best kept in shcools as they tend to be very nervous if kept alone. To start, five or more fish is recommended. Pick out both large and small fish as the males tend to grow faster than the females.

The ideal temperature for Discus is in the range of 82 - 86, and the Ph level should be between 6.7 and 7.2. Several well-known Discus breeders have found that Discus fry grow well in alkaline water and that adult Discus breed better in acidic water. The tank size for 5 or 6 baby Discus should be at least a 20 long or a 29-gallon tank.

Now for controversy: I prefer a bare bottom because of ease of maintenance-siphoning debris and monitoring how much food the fish consume. Others may argue that this is wholly unnecessary. You can keep the fish in a gravel-bottomed tank with plants an decorations. I've had luck with both methods.

For filtration, both the sponge filter and the outside filter work well. If you want to splurge, a wet-dry filter is also suitable.

FEEDING: A commercial Discus formula is recommended. There are several on the market. The fish thrive on them. Beefheart is a main ingredient in these forulae. Some state "Cows don't live in rivers, so why feed beefheart?" It works for me. Try several types and see what works best.

continued on page 7

Keeping Discus - Made Easy

WATER CHANGES: Yet another controversy in keeping Discus. The Discus fish comes from a part of the Amazon where the water is very pure, similar to distilled water with conductivity between 10 and 40 microsiemens and a PH value between 5 and 6.5. Even after many generations of tank bred fish, the Discus is still sensitive to water quality. This is one of the primary reasons Discus have a reputation of being difficult to keep. Maintaining high water quality by frequent water changes is recommended. The average Discus breeder changes the water every day on fry and every other day on adult breeders. The average amount of water changed ranges from 10% to 20%. I raised three brown Discus in a 29-gallon tank with water changes 2-3 times per week. They reached 5"- 6" in size in about one year, and I had a pair breeding at 14 months. This was a planted tank with a gravel bottom and a undergravel filter!

BREEDING: Breeding Discus is not difficult. The difficulty is getting a pair. The five or more Discus that you started with will take about 12 to 16 months to mature. The largest fish in the tank is usually a male. If everything at this point goes right, a female in the group will pair off with a male and start looking for a suitable spawning site. If you have ever raised and bred angelfish or other large cichlids, the pairing and mating behavior is quite similar. After cleaning the site, the female will make a couple of "practice runs" and then start to lay eggs. She is followed by the male fertilizing them. The male will defend the area near the spawning site while the female will fan the eggs. The eggs will hatch in 48 to 52 hours.
If the pair eats the eggs or fry, give them some time, many pairs go as many as 10 to 15 spawns before they figure out the whole process. The pair may re-bed the fry several times a day. On the third day, the fry will free-swim and hopefully take to the sides of the adult fish.

The theory behind the fry attaching to the [parents is that in the area of the Amazon where Discus come from, the water is so pure, small organisms that fish fry would feed on don't exist, so the Discus fish has evolved to the point that the fry feed off parental skin secretions. Without doing this, the fry would perish.

A method of artificially raising Discus using egg yolk has been used for 20 years or so, but raising the fry with the parents is much more fascinating to watch. After 3 or 4 days of feeding off the parents, the fry should be weaned on to live baby brine. At this time, the fry start to look like Discus. Once the fry are eating brine, you must pull them from the parents because the fry are now large enough to cause damage to the parents if they continue to feed off of them. After 7-10 days, start to introduce finely-ground beefheart into the tank. It may take a couple of days, but the fry will eventually pick at it and switch over.

At 2-3 weeks of age, a Discus fish is about 3/4 of an inch long, at 6-8 weeks of age. they are at sale size- nickel to quarter size.

If you pull the fry at 7-10 days, the pair will probably spawn again in about a week.

The main reason for failure in keeping Discus is starting with unhealthy stock. Do your research if you intend to keep this spectacular and addicting fish.

continued on page 14

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MERIT PARKWAY NORTH, TO ROUTE 8 NORTH TO EXIT 27, AT THE MOBIL STATION LEFT ONTO ROUTE 63, TWO LITES LEFT ONTO RUBBER AVENUE (DUNKIN DONUTS ON THE RIGHT HAND CORNER), WE ARE LOCATED IN THE MOUNTAIN VIEW PLAZA WHICH IS 1.2 MILES ON THE LEFT

NEON TETRAS

by RL Van Hyft

Neon tetras, Hyphessobrycon Innesi, need no introduction to the hobbyist. Millions are imported annually without any long lasting effect on their natural population since they proliferate rapidly in their natural habitat. This free breeding activity just doesn't occur in the aquarium. I hope this article, containing my experiences, will help others to spawn this problem fish.

When healthy stock is conditioned, the neon's already intense colouration becomes downright breathtaking. The colour consists of an electric blue stripe running the full length of the body. Under this is a scarlet stripe extending through the rear half of the body. Sexual distinctions show as the breeders ripen. Then the females are much deeper and broader in the body.

I scoured the local shops looking for healthy young neons. I would not purchase stock from any tanks containing fish with either the blue or red colouration interrupted or dull. Such fish probably have incurable diseases which will ruin your breeders. Large breeder size neons are out of the question for breeding stock. These fish have probably been ruined for breeding by prolonged maintenance under poor conditions. I finally located some ideal stock at a very reasonable price from one of our quite reputable dealers. I purchased ten fish to ensure that I would get a number of each sex. The stock I had purchased were being maintained in hard water at a warm temperature. My plan for conditioning them required that my breeders be maintained in water of 1.5 DH, 6.4 PH and a temperature of 69-73 degrees f. I acclimated them with a series of 20% water changes per day over a period of a week. Acclimating was done in a two gallon tank to conserve water.

The neons were placed in a ten gallon tank under the aforementioned conditions, after acclimating. The all glass tank was placed over a dark piece of carpet on the concrete floor of my fish room. The tank was covered with an opaque plastic cover. This provided the fish with dark conditions and the low temperature they require. A nylon spawning mop provided the only cover available for my neons. An outside power filter was used, with floss, charcoal and boiled sphagnum moss as the filter medium. The tank was kept clean by siphoning off mulm and uneaten food frequently and 20% of the water was replaced each week with water from a dehumidifier. The fish were fed several times a day with as varied a diet as possible, including freeze dried foods, frozen beef heart, frozen shrimp, live shrimp, tubifex and good quality flake food.

Growth was very rapid and the fish showed their liking of the good food and clean water by showing their best colours. Within two months the fish were beginning to spawn in the conditioning set-up. I moved the spawning mop with eggs to a sterile hatching container but the water soon showed a little cloudiness and the eggs turned white.

SPAWNING:

After I found out that I wasn't going to save a spawning that easily, I set about to do the job right. One gallon plastic tanks were scalded with boiling water. This had to be done quickly to prevent bulging. The tanks were then filled half way with crystal clear, peat filtered, amber toned water of 1.5 DH and 6.2 pH. The tanks were placed over dark carpeting on my fish room floor which gave the water a temperature of 72 degrees f.

The slender, colourful males were selected and placed in separate tanks with quite "heavy" females. The tanks were covered on all sides and the top with cardboard. Half way up the front side, I cut a one inch by two inch window to allow a little light to enter. I checked the tanks twice a day for spawnings by turning off all the room's lights except for a high intensity lamp aimed at the floor, to provide indirect lighting. The tanks were uncovered and held over the light while examining from the top.

After 48 hours, the water in both tanks had turned cloudy. The water was replaced with a three-quarter water change in both tanks. I decided to outfit one tank with a nylon breeding net, spawning mop and a small inside filter. The other tank was left as it was. After 24 hours the filtered tank had a spawning while the other tank contained slightly turbid water and fish with washed out colours.

Now action had to be taken to try and save the spawning. All work was done by indirect lighting previously described. The breeders were fished out, the mop was shaken out and removed and the filter and net were removed. About 75% of the water was removed to eliminate any chance of a bacterial rise caused by decomposing milt. White eggs (infertile) were carefully removed with an eye dropper. Clear water of the same chemistry and temperature (72 degrees F.) was placed into the tank. Another check, 12 hours later, revealed one more bad egg which was also removed.

The eggs hatched within 36 hours of removing the breeders. The fry were tiny and resembled glass commas. They were examined at this time and at all future times using my indirect lighting method. The fry are extremely light sensitive and exposure to even very soft light produced violent wriggling motions. The tank was examined morning and night for cloudiness and a 50% water change was made at even the slightest hint of turbidity. Three times during the first five days I had to make a water change. After five days I noticed some detritus on the bottom of the tank so I siphoned off the fry into a clean plastic tank. The fry were quite active but not yet free swimming and their yolk sac had nearly disappeared.

I decided to give them their first feeding of infusoria. This early feeding would ensure food availability as soon as needed. The infusoria preparation was done carefully to prevent a bacteria rise within the fry tank. The culture I took my infusoria from did not have many bacteria present as was evidenced by it's nearly clear condition. Holding a sample near a light did, however, reveal many tiny swimming organisms. The culture was siphoned through a fine net to remove any large particles. The liquid was then passed through a piece of paper towel. The infusoria is left on the towel which is then "blotted" on the surface of a container of soft water. The bacteria and hard water of the culture can then be kept out of the fry tank. The soft water and infusoria mixture was examined against a strong light to ensure that the desired organisms were present. The mixture was added to the fry tank every four hours, day and night for three days. A 50% water change was made after feeding for ten days. Three days following free swimming I began feeding both infusoria and newly hatched brine shrimp (San Francisco). This diet was changed to "brine shrimp only" after seven days. Light aeration was started at this time. When the fry were one month old some fine, dry food was included in the diet. Uneaten food was removed frequently. The temperature of the water during the rearing varied between 72 and 75 degrees F. The fry were gradually introduced to light between 10 to 21 days following the spawning. I managed to rear 24 out of 31 fry hatched. The loss of seven fry was caused as follows: 3 "belly-sliders" were destroyed, 1 fry died when crushed by an airstone, and 3 fry died one night when the water became slightly cloudy.

All facets of breeding neons have to be given meticulous attention if success is to be obtained. Select only young healthy stock and condition them in soft water of less than 73 degrees F. Clear water, with some organic content, must be used at all times. The presence of bacteria when spawning or rearing means disaster and failure. Remove any substances which could conceivably decompose. Do not hesitate to change water when in doubt. Eggs and newly-hatched fry cannot tolerate light. Most of the breeding accounts that I have read specify that the spawning occurs at a low temperature (72 degrees F. or less) while the fry are reared at a warmer temperature (75 degrees F.). This temperature change phenomenon almost certainly does not occur in their natural habitat. I used cooler temperatures during both spawning and rearing with quite satisfactory results. Cool temperatures, aeration, filtration, dark conditions and soft acid water will play a role in controlling bacteria growth.

Some of the behavioral traits I observed in my breeders were not recorded in any of the spawning accounts I have read. ***First:*** Breeders in turbid water would lose their colours and become nervous. Fish in this state will not spawn and should be returned to the conditioning tank for a few days. ***Second:*** A male neon was seen forcefully repelling other males and non-participating females from the spawning site. I would, therefore, set them up as pairs instead of trios. Third: My fish spawned much younger than what has been recorded in most other accounts. Others say the fish spawn at nine months.

Successful accidental spawnings of neons are difficult to imagine. Neons are demanding about their water chemistry, temperature, light and cleanliness. Providing these conditions only occurs with meticulous aquarium management. Spawning tank-reared specimens is reputed to be easier than spawning wild specimens, that is, of course, if the tank reared neons are also reputed to attain larger sizes and better colour than wild fish, so consider this when choosing fish for a show.

The feeling of triumph that comes with the successful breeding of neons makes all the extra effort worthwhile. I encourage you to try it.

Reprinted from "PLECOSTOMUS" by way of Hamilton &District Aquarium Society December 1982

"Spawning Discus"

by Tom Neal

(A B.A.P. Report)

Spawning Discus isn't as difficult as people would have you believe. If their needs are met then you will be successful in the long run. The key is your willingness to do the required maintenance and having plenty of patience.

Even though I started with a breeding pair of Discus, I recommend that you should start with 6 or 8 small fish. I suggest this because the fish will pair up naturally if given a chance. This will make it easier to spawn these fish in the long run. Plus, in a year your fish will mature and will be totally used to you, your water, and your maintenance practices. This will also make it easier to spawn these fish.

The key factor to spawning these beauties is cleanliness. Young fish need 33% to 50% daily water changes to remain disease resistant and to attain their maximum size and beauty. Believe me, if you could compare fish that did to those that didn't get this kind of care then you would plainly see the difference.

What you feed your fish is an important as how clean you keep there water. It is very important that you provide a very well balanced diet. Avoid foods, fresh or frozen, that have their origins in fresh water. Frozen bloodworms, daphnia, and mosquito larvae are but a few of the foods that are suspected of carrying diseases. Not to say these foods are bad for all fish. It's just that Discus, especially young ones are real wimpy.

To attain full growth from your fish you will have to provide a tank large enough for them to grow in. A 55 to 70 gallon aquarium would not be considered too large for a group of 6 to 8 to grow to adult hood. Remember, daily water changes, a good diet, and a roomy aquarium will all combine to give you some beautifully large Discus. Any shortcuts that you take will show up in your fish.

The next thing we need to discuss in water quality. As I have stated before you can't keep clean enough. On adults you want to change 50% of the water twice a week. The detritus should be siphoned daily from the bottom of the tank.

PH isn't as important as people would have you believe. I have known Discus to spawn in water ranging from 5 to 8 on the PH scale. The most important factor to remember about PH is to keep it stable. A fluctuating PH is much more dangerous than a stable one that is kept at either extreme!

Hardness is another over stated problem in breeding Discus. It is true that Discus prefer soft water to spawn in. But, they will spawn in hard water. You might not have as high a hatch rate, but you should get quite a few babies.

Once you have a pair you will have to put them into a spawning tank that contains no other fish. You don't want any substrate or furnishings in the tank either. The only thing you want in the tank is something for them to lay their eggs on. This can either be slate, a spawning cone, or anything else that is non-toxic and of the right shape.

In my opinion a sponge filter must be used in your spawning tank. The sponge filter will provide biological and some mechanical filtration, while the young are too small to be with a power filter.. Again, it's my view a sponge and filter should be used at the same time. At least until the fry are about to freeswim. At this point the power filter is shut off to avoid sucking up the babies. Always remember what I said about cleanliness. YOU CAN'T HAVE YOUR DISCUS TANK CLEAN ENOUGH! Using both filters will give you a little room for error.

At this point, with any luck you Discus should have laid their eggs. As long as there isn't a bunch of commotion around their tank you shouldn't have to worry about scaring your fish. Once the have started spawning it takes an act of God to stop them.

Now all you can do is be patient. It will take 3 days at 82F for the eggs to hatch and then another 5 days, while they consume their yolk-sack, to become free-swimming. During this time the parents will take turns

fanning and guarding the eggs and fry. Don't get too worried if the parents eat their eggs or fry at this point. Young fish sometimes eat their prodigy out of immaturity. They should catch on after 3 or 4 batches. If your fish have spawned once, they will; spawn again.

If you notice that the parents are fighting you might want to take 1 of them out at this point. Try and leave the parent that shows the best parental instincts in with the fry. Either parent is capable of feeding and caring for the young, so don't be afraid to make a mistake.

Now that you are about to have free-swimming fry, I have a couple of hints for you. On the day before it looks like your fry are about to be swimming add extra lighting to the tank and turn down your air supply. I have used to have my fry swim aimlessly around the tank in search of their parents. I couldn't figure out why until someone gave me the same advise.

You would add extra lighting to the tank to make sure the aren't any shadows. Discus fry look for their parent by looking for dark objects. A dark area in the tank will confuse them.

In my opinion the most important factor that effects babies finding their parents is the amount of vibrations in the water. Baby Discus us their lateral line to detect vibrations from their parents. Many times I have seen my Discus signal their young by a flick of a fin or the twitch of their body. The babies are able to zero in on there parents vibrations thus making the parents easy to find, even in very cloudy water. Turning down the air supply cuts way down on the amount of vibrations in the water. I had to eventually turn my air completely off in order to get my fry onto their parents. Using this method I am no longer having trouble with my fry.

Your fry will need to feed off their parents for minimum of four days. On the fifth day you may start dropping small amounts of newly hatched brine shrimp into the tank. Place the shrimp just above the parent and let it fall to the babies. As the babies get older they will eat more and more brine shrimp. By the end of four weeks the fry should be all weaned from their parents.

The parents should be fed very lightly during this time. When the fry are getting ready to be weaned you will notice them eating more and more adult food.

During the time that you have the fry with their parents you are going to have to keep their tank clean without the aid of a power filter and possible the sponge filter. After the fry are three days old they can tolerate small water changes. For the first week and a half you must siphon the detritus daily and replace the water with fresh tap water. As the fry get older they will tolerate larger and large water changes. This is where your heavy maintenance practices pay off. You will not get away without filtration for very long if your tank wasn't sparkling clean to start off with. After seven days you can try to turn your air supply back on. Watch very closely. If they seem to be wandering away from their parents then shut the air off immediately. If not your babies will get lost and not be able to find their parents.

In closing I would like to say that anyone can breed Discus as long as they are willing to do the extra work that is involved in keeping this beauty in prime condition. When you see your fish with babies then you will realize all the work was worth it as there is no other sight in this world as beautiful as Discus parents with their babies.

REPRINTED FROM THE AQUARIST, MAY, 1995
WORCESTER AQUARIUM SOCIETY

THE NORWALK AQUARIUM SOCIETY NOW IN OUR 48th YEAR

Vendor/Buyer Preparation for Auctions

by Gene Harris, NAS

It seems there is never enough time in our busy, busy lives. There is an ancient military expression "Be Prepared." This is still good advice for aquarist preparing for auctions.

Every fish club auction that I attend results in me being a vendor of at least something.This supports the club and puts a little bit of money toward my electric bill! No matter how much I plan ahead for any auction, there just never is enough time the morning of the auction.

But really the planning for the auction should start long before the morning of the auction. The dates of upcoming auctions should be prominently noted on calendars at both home and personal workplace desk. The spouse/girlfriend/other half should be reminded weeks in advance and then again as the real date arrives. This helps, but does not guarantee,avoiding conflict about another Sunday being spent on the fish hobby

If you don't already have a styrofoam box, get one from a local pet store or another hobbyist. These boxes are invaluable in transporting vendor items and new purchases to and from the auction. If you absolutely can't get a styro, use a large heavy plastic thermos/igloo box.

If you don't already have fish bags, get some. Some of the local mom and pops store may even give you a few. They come in various sizes, get a variety. You can sometime find these for sale at auctions. Do not use bread bags, get genuine fish bags.

Bags do little good without rubber elastic bands, so go buy a bag of them also. I can't tell you how many times I've been at auctions and seen great fishkeepers holding a leaking bag and looking for a rubber elastic band. Always double bag your fish for sale, bring extra bags and rubber elastic bands in your styro as a back up system.

Another step in auction preparation is preregistration with the fish club Most auctions usually allow sister clubs to distribute upcoming auction forms and notices at their auction. This is a good time to take a form and prepare for the next auction in your area.

Preregistration is easy enough to accomplish by obtaining, completing, and mailing a preregistration vendor form. Keep a copy and make sure that you deliver the items to the auction business table at least 90 minutes before the auction starts. Preegistration usually results in preprinted labels being provided quickly after you advise the auction business desk that you have arrived. Label your bags and hard goods. It's a good idea to have a cellophane tape roll of your own to use to make sure all labels are secure. The registration process should also result in you getting a bidder number card. If it doesn't, make sure that you get a bidder number well before the auction starts.

Now that your vendor items are labeled and turned over to the auction officials and you have a bidder card its time to start having fun ! Take the pen out of your pocket and start scanning over the items that others are bringing to the auction. I use the back of the bidder card to note lot numbers offish or hard goods I want to buy. It's amazing some of the fish you can find at a local club auction. Some are pairs, some are breeding colonies, some a fry, some are huge ! You never really know what will show up at an auction unless you are there.

It's best to attend an auction with spouse or friends so that one of you is always present in the room during the auction and has the 'buy' list with lot numbers on it. This helps ensure that your favorite picks are not missed to other bidders while you step away for bathroom break. Packing some snacks, sandwiches, and drinks in your styro is a good idea as you will spend that much less time away from the auction action. Some clubs have a board with upcoming lot numbers displayed so that you can be prepared for your items.

Auctions take many hours to complete and the pace sometimes results in bidders missing items they wanted to buy. Staying alert for hours can be taxing, so try to stay sharp and alert.

If you have the time, stay until the end of an auction as that is when the real $ 1 a bag bargains can be found. Remember to pay for what you bought and then head straight home. The fish need to get into warm oxygenated tanks, don't stop for dinner until the fish get into their new aquariums.

BREEDING DISCUS - MADE EASY

Suggested reading and references for this article:

HANDBOOK OF DISCUS by JACK WATTLEY
DISCUS FOR THE PERFECTIONIST by JACK WATTLEY
DISCUS A REFERENCE BOOK by BERNARD DEGAN
DISCUS FISH, KING OF ALL AQUARIUM FISH
by EBERHARH SCHULZE

If your are interested in any of the specialty groups, contact any of the following:

The Discus Study Group c/o Dave Lake
12 Holly Drive
Tuckerton NJ 08087
(609) 294-1164

North American Discus Society c/o Bob Wilson
6939 Justine Drive
Mississauga, Ontario L4T IM4
(416) 677-3765

Diskus Brief, The International Discus Journal
c/o Curtis Kafer, 28180 Verdin Street, N. W.
Isanti, Minnesota 55040-9803
(612) 444-6029

How I Breed And Raise Discus Fish

by Dr. Med Edward Schmidt-Focke

The discus breeder today is confronted with different problems than found earlier in the 70's, such as, lower water quality, had to eliminate parasites and polluted live foods. The problems make the breeding of discus more difficult and therefore more cautious methods in breeding have to be used. The well know discus pioneer and also one of our scientific advisors, Dr. E. Schmidt-Focke has bred and raised discus for the past 40 years. (1) In the following article he will give some pointers to lessen the danger of transferring disease from parent to fry. The recommendation from him to separate fry from the parents after eight days when free swimming is midway between natural and artificial raising of the fry. Artificial raising of the fry is successfully practiced in the USA and Canada where the eggs are taken from the parents after the completion of the spawning procedure.

In the past ten years the diseases in discus fish have drastically increased through gill, skin and body-worms. In the slow growth of young fish at the age of four to five weeks worms are already present. You can easily spot these worms by checking with a microscope. The treatment with different medicines (Masoten, Concurat and Malichite Green etc.) were only temporarily and partially successful. Generally I found that these treatments decreased fertility in the females and increased sterility in the males. I came to the conclusion that medicines which contain poisonous substances are more harmful that food and experienced Fish Pathologists cannot demonstrate the results. By using Trypaflavin and Methylene Blue I have found up until now no harmful side effects. Despite the success with Flubenol %5 I am doubtful, I refer to the waiting period before the food animal is allowed for human consumption (where the treatment is of a much higher dosage specifically with pigs in comparison to aquarium use of 200 mg/100L of water- Horst W. Koehier). I found also that the planarians and snails died within five or six days, as well the Mexican Crayfish died after eight to ten days. Since one year ago I have refrained from using any medications. The selected breeding pairs I treat with a short salt bath (15g L for ten minutes under watchful control) to kill at least most of the parasites. After the salt bath I put the pair in an extra clean breeding tank. When the pair has spawned and the fry are free swimming, I remove the fry from the parents when the are eating newly hatched brine shrimp - after eight days. The same as I have described in my book. (2) Young fry that I remove earlier show growth deformities. Also, when the fry was separated later diseases from the parents were transmitted to the young fry.

In the beginning I made a mistake and I used a fine weaved net to catch the fry and the skin was damaged. At the same time I put the fry in water of a different pH and resistance value. This transfer, the fry survived but later 40% showed distorted side-bars. Distorted side-bars are not heredity. Since this experience I handle the young fry very carefully and make sure there is no difference in water values between the parent and raising tank. Young fish raised using this procedure are healthy and vigorous and you can continue to breed discus successfully as many hobbyists can attest to. (3,4,5)

Despite my doubts, all my Alencer which are wild fish breed well and the fry raised are healthy, vigorous and eat any food given. From the second spawn I kept eight back and these young fish are of excellent growth and size, healthy and vigorous with a good appetite. By early separation of the fry from the parents it is possible to raise healthy offspring. It is important to keep the breeding pair in a clear and clean breeding tank with their own in and out source of water. An inside filter has the advantage of producing a water current below the water surface which induces good circulation to bring dirt and fecal matter into the filter basket. It is advisable to clean the filter basket daily with hot water. This reduces the risk of having parasites and their eggs in the tank.

Biological Filtration and U.V. light are to my experience not required, especially when a 20% water change is made daily. The fresh water used I prepare in other tanks.

Since I made this articulate and extensive procedure to breed discus I have had no losses through diseases. The same experience the breeders of Thailand had some years ago. These breeders made water changes to reduce diseases. Twenty years ago discus from Thailand were healthy, of great size and fertile. Sadly today young discus from Thailand are treated with unimaginable color substances for an early coloration. Due to the great amounts of discus available at the wholesalers the quality has dropped and this is really a sad situation. The same can be said from the Betta Splendens.

The Discus species and subspecies should be kept clean and I plead that the species not be mixed or interbred. I keep my species strictly separated. The pictures sent to me from different shows always demonstrate the interbreeding with noticeable plain green colouring. With proper line-breeding the color can be maintained. With the F1 generation is divided in two lines and when specie degeneration appears the best animals from the two lines can be mated together and the species is maintained. Also, through selective breeding wild colours may be improved, because wild fish are split productive. With my Alencer wild pairs the splitting also brings brown offspring.

In the vicinity where I live (Frankfurt/M) all of the ponds are poisonous for live food. Because of this, I started to produce my own live food in a garden pond and plastic vessels. I raise Daphania, Mosquito Larvae, Tubifex and small Water Crayfish. These are fed watered Baker's yeast milk and blood. Beefheart contains a lot of hormones. This is because of the feeding of hormones to the young beef. Feeding a lot of this beefheart I observed the back fin streamers grow extra long and the fertility is decreased in the males only. I have not noticed this in my wild males. From this experience I use only hormone-free beefheart, vegetables that have been biologically grown, shrimp, ocean Plankton and fishroe. The whole food mixture is bound together with gelatin.

To bring out the body color it is advisable to use carotene substances in the beefheart mixture. There are 30 different varieties available from different fruits and plants.

Literature

1) Kohler HW visit by Dr. Schmidt-Focke *Diskus Brief* 3/89.

2) Schmidt-Focke E. *My Experience with Diskus* Fischen Bede Verlag.

3) Schmidt-Focke E. *Red Diskus Fishce Diskus Brief* 2/90

4) Konrad W. *Color Description Red Alencer F1 Off-spring Diskus Brief* Issue (s 72).

5) Kohler H.W. personal conversation July 1990.

REPRINTED FROM THE SEPTEMBER, 1996 ISSUE OF ***OUR DISCUS***, OFFICIAL PUBLICATION OF THE
"NORTH AMERICAN DISCUS SOCIETY"

THIS ARTICLE IS IN REMEMBRANCE OF DR. MED EDUARD SCHMIDT-FOCKE WHO PASSED AWAY EARLIER THIS YEAR . WE WILL ALL MISS HIS ARTICLES AND HELP ON THE DISCUS FISH HE SO LOVED. AND WHO DID SO MUCH TO PROMOTE THE AQUARIUM HOBBY.

WHY NOT BRING A FRIEND TO A CLUB MEETING AND SHARE THE EXPERIENCE OF THE AQUARIUM HOBBY

BAP REPORT APRIL 1998
by Sal Silvestri

CURRENT POINT SUMMARY

Sal Silvestri	Expert Breeder	1210 points
Don Barbour	Grandmaster Breeder	805 points
Robert McKeand	Grandmaster Breeder	745 points (#)
Mark Keitel	Master Breeder	600 points (#)(*)
Don Johnson	Master Breeder	530 points
Don Maloney	Master Breeder	455 points
Ed Katuska	Senior Breeder	365 points
Robert Pelikan	Breeder	460 points (*)
Broadmeyer Family	Breeder	270 points (*)
Basil Holubis	Breeder	135 points
Richard Marino	Breeder	125 points
Ed Schildnecht	Breeder	70 points
Doug DeMent	Breeder	70 points
Gene Harris	Breeder	60 points
Joe Masi		85 points (*)
Jeff Polster		60 points (*)
Kenneth Belog		40 points
Peter Izzo		10 points
Will Swanson		10 points
Allan Grabowski		5 points

(*) & (#)..As for my famous "Asteric Club Members" .."YOU OWE ME ARTICLES!!"

A quick reminder....(#)-this symbol means that you owe me an article on the breeding of the (20 point) specie before you get any credit for the great accomplishment!.. (*)-this symbol means that you owe me a plateau article.

Welcome New Participants to the BAP Program:

Allan Grabowski - Xiphophorus-Maculatus

RECENT SPAWNS:

Sal Silvestri - Paracyprichromis-Brieni "velifer", Pelvicachromis-Pulcher

Mark Keitel -Apistogramma-Borelli, Labidochromis-Perlmutt

Congratulation is also in order for Mark. He has spawned the beautiful "rainbow gudgeon" Taturendina-Ocelicauda. This is a 20 point specie, but before Mark can get credit for this great accomplishment he owes me an article on the breeding of this fish. Also, Mark has enough points to reach the GRAND MASTER plateau, all he has to do is write a plateau article. That's why Mark gets my double "whammy!" (#) (*).

"I hope I'm not putting too much pressure on you, Mark!!??"

Rich Marino - Haplochromis sp. "Fire Hap"
Don Maloney -Tropheus-Dubuoisi, Eretmodus-Cyanostictus
Gene Harris - Poecilia-Velifera
Doug DeMent - Challinochromis-Popellini
Basil Holubis - Cichlasoma-Nanoluteus, Haplochromis sp., Melanoteania-Praecox, Poecilia-Eiseni, Geophagus-Steindechneri

REMINDER:

We'll be dropping from the BAP report anyone who has not bred a fish for two consecutive years. Any BAP submission will automatically return breeders to the report. All past points remain intact.

BEFORE I CLOSE I WANT TO THANK ALL PARTICIPANTS, YOU'RE ALL WONDERFUL... " JUST KEEP THOSE FRY COMING".

DID YOU KNOW.....

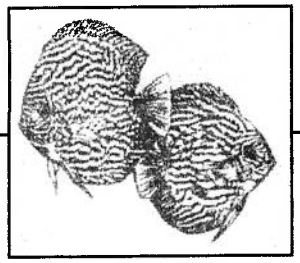
by Sammy Swordtail

CICHILD FAX

William T. Paullin is credited as being the first American to successfully breed the Angle fish, Pterophyl lum Scalare, in captivity, in 1915.

Lake Tanganyika is the home of the largest known cichlid which is called Boulengerochromis Mi crolepis and could obtain a body size up to forty inches. This African lake is also the of the worlds small est cichlid, Neolamprologus Multifasciatus which averages a body length of about one inch to an inch and a quarter.

Ichthyologist Dr. Johann Jacob Heckel, first described a specimen as Symphsoaon Discus in the year 1840. It was not until 1933, almost one hundred years latter, that the first Discus were imported into the United States.



MAY 21st MEETING

NORWALK AQUARIUM SOCIETY PRESENTS

BING SETO

Come join the Norwalk Aquarium Society in welcoming Bing Seto to the East coast. Bing Seto is the owner , operator of ***Discus World.*** *Discus World is a dream come true for longtime hobbyist Bing H. Seto. After leaving the hobby to raise a family and make his mark in barefoot water skiing, (Two Time National Champion), Bing came back to the wonderful world of discus breeding. However, this time it is more than a hobby. Bing is so serious about discus breeding that he had a 17'x45' high-tech. discus hatchery built. Bing will be showing us slides of his hatchery and will answer all your questions on the care and breeding of 'The King of the Aquarium". Bing will be at our club meeting in the month of May 1998.*

Bing is sponsored by Ginger Products and San Francisco Brand.

The Norwalk Aquarium Society holds there monthly meetings on the third Thursday of the month, at the Westport Nature Center. All are welcome to attend our meetings. We have door prizes refreshments, raffles, and some kind of hobby presentation. Join in the fun come on down and help to keep the hobby fun and exciting and bring a friend along.

NOW IN OUR 48TH YEAR

WOOD IN THE AQUARIUM

Jim Toney, _The Hobbyist_

The display aquarium is often at its best when it presents a reflection or concentration of nature using her own materials. The potentialities of wood in its many shapes and forms has the capacity of adding character to an aquarium and sometimes is overlooked by the aquarist. It is true that not all woods are suited for the aquarium. Many aquarists have been disappointed when the much admired gnarled branch or twist of root they have chosen to fit in with a particular aquascape initiated a cloud of infusoria and a host of dead fishes. If asked to list the important principles if selecting wood for our tanks, the following would certainly be included:

1. Green (unseasoned) woods are wholly unsuitable.
2. The longer the wood has lain under water the better for aquarium use.
3. Acid woods are to be preferred to all others.

The last point deserves some explanation. Botanists have recognized the relationships between plants and pH in various forms. The acid woods refer, in this case, to those trees and shrubs which are most closely associated with acidic soils. Unfortunately for aquarists, the majority of trees and shrubs do not fall into this classification. Very desirable woods are birch, oak, alder, some of the willows, cypress, magnolia, Chinese chestnut, holly and Carolina hemlock. Alkaline trees are apple, plum pear and various other fruit trees, maple, ash, black walnut, elm and a host of others. To be certain the aquarist can gain more complete information concerning pH of woods from the various handbooks on trees and shrubs available. No matter what the choice of wood, it is advisable that it be "cured". This means to boil it in a strong salt solution for several hours, followed by a soaking period (discard the salt water and replace with fresh water) from one to two weeks. This treatment will leach the soluble organic and inorganic matter from the wood, coloring the water dark brown. In case of those woods, which have been immersed in water for a long period, the curing may be omitted. However, the salt treatment should be given to discourage any infestations of unwanted parasites.

Other items from nature such as coconut shells, and bamboo can be very effectively used in the aquarium.

Most of the times the wood will not stay put when it is first placed in the aquarium. The dry wood needs to be thoroughly soaked, to replace the air in the wood with water. Prolonged soaking will do this but sometimes we do not want to wait that long and a few short cuts can be made by wedging slate in holes drilled where they cannot be seen. Wood can be tied or lashed together with either nylon or heavy linen thread. The author suggest there maybe other ways to introduce wood into the aquarium and it is up to the reader to find these.

Ed. note: The use of large plastic lids screwed into the driftwood and then covered with either gravel or heavy rocks works equally well. In fact several pieces of driftwood may be fastened together by screws.

Reprinted from: Toney, Jim. 1992. "_Wood in the Aquarium_". _The Calquarium_ Vol. 34, No. 12 (August): pg. 21. Calgary Aquarium Society, Calgary, Alberta, Canada.

Discus Setup

By: Dallas

When I first started getting into Discus it seemed to me that there was not allot out there on the subject. I found some old Whattley books which endorsed the old UGF as the new thing. I read and searched finding little on the what I needed to do. I visited many of my local fish stores and ask about the subject. Few new anything about Discus. Finally I compiled my data and bought a ton of stuff that had a picture of a Discus on it. After much time, effort and money I think that I am finally successful in the keeping of Discus. What I want to do now is to share my results with those of you who are wanting to setup a new Discus tank. Remember, I am not an expert nor do I claim to know it all, but rather, I want to share some of the information that I have tested and proved and found useful in my trek of Discus keeping.

The Tank

I first started with a 20g Hex tank. This proved to be good for awhile. Though I had only two Discus they seemed to enjoy the tank. Later I added two more Discus. I found them picking and fighting more and more, the two new Discus continually withdrew and hid in the upper corner of the tank. Later I moved the four Discus to a 55 gallon tank, here they really were comfortable and free. The picking and hiding stopped and I could really see these magnificent creatures and appreciate their beauty. The thing is, when you choose a tank, get an idea of the maximum
number of Discus that you want to house together. As a general rule of thumb I use the ration of inches of Discus to gallons of water, this should be doubled. For example: If you have a 5 inch Discus, give him 10 gallons of water. If you have two seven inch Discus, give them 28 gallons of water. I guess I could use the rule of thumb of inches of Discus to inches of tank, but I believe most people have enough common sense to figure this out. The idea is to give Discus plenty of room to be comfortable and grow.

TIP: If you can, choose a tank that is wider front to back than the normal 12". I prefer a 50 gallon over a 55. You really miss out on a lot if you keep discus in a small tank.

The Filter

Well I have tried allot of different kinds of filtration, and they all seem to work, but some work better and some create less work. The first filter I started out with was a BIO-WHEEL 160 (for a 20g Hex). The Wheel worked great but there was a little work involved to keep it up. About every three days you need to clean the filter pads and about once a month you need to disassemble the filter and clean the pipes, motor and etc. (exception: NEVER clean the wheel itself or you will lose BIOLOGICAL FILTRATION.) I have also used the Emperor filter which is also a great filter and the same maintenance applies to this filter as with the 160. I have had Discus at work using the Under Gravel Filter, both using lift tubes and powerheads. I would strongly advise against this. Although it is possible, the maintenance is terrible and chance for loss is strong. I have also done a setup with a Wet/Dry and if you can afford it, this is the way to go. The maintenance is easy and the water changes are also much easier. Other filters I have tried include the Triad, Millennium 2000, Fluidized Bed Filter (Quick Sand) and canister filters. All work but I like Wet/Dry's or the BIO-Wheels best. This gives you a low end and a high end as far as cost and maintenance with good performance.

TIP: Pick a filter that is easy to clean regularly. Place it on or in the tank where it is easy to get to. The easier it is to service the more you will service it.

HEATING

This is probably one of the most important pieces of equipment that you need. Don't skimp on a heater, the cost of a high priced heater out weighs the cost of several Discus deaths and grief. In a Discus tank you need to maintain the water at a temperature of 84-88 degrees (F) constantly (although I have heard and seen

great success with the temp range at 82 degrees). In Whattley's Discus Book I read a statement that stuck with me: "There is no reason why Discus should EVER get ick." I skimped on a heater and bought a cheap one, my Discus got ick. After several expensive drugs (and a new heater) they all survived. I read an article in Tropical USA where James Whattley advised his readers to supply a minimum of 5 watts per gallon. I have stuck with this advise and haven't had a problem since. I believe a good heater needs to be a constant heater, i.e., one that does not fluctuate. It also needs to be a dial-in type heater. The best on the market, in my opinion is the Acurra 1000 heaters. There are heater that resemble this heater that are for sale at Walmart/Kmart but they seem to fluctuate to much. Because I have had such good luck with these heaters I haven't tried any others.

TIP: When you have a tank that is over 50 gallons, it is best to go with 2 smaller heaters than one large one, this way if one sticks it is not going to cook the tank. Example: On a 55g I use two 150w heaters in separate corners of the tank.

WATER (PURIFICATION)

Discus need soft (dKh 1-2) water that is low in pH (4.5 - 7.0. Although I have now heard that Discus are being bread in high pH (8.0) water. A general Hardness needs to be maintained at 1-25 ppm Total Hardness and a Total Alkalinity/Buffering Capacity of 1-80 ppm and a pH around 4.5 - 7.0. So first this means you need to get some test kits. For pH I use an electronic pinpoint meter but this is not really necessary. I now just use the test strips by Mardel. Look for the bottle for freshwater called Aqua Lab test strips, this will give you pH, Buffering and Total Hardness all in one. Second you have to figure out what method you want to use to get soft - low pH water. I use a RO/DI unit that works great The only problem is that RO/DI strips the water of any conductivity (buffering) and will eventually raise the pH of the water unless you reconstruct the water. If you use a RO/DI unit, use a buffering agent to buffer the water. I have had great results with Discus Buffer by SeaChem. There are also some new Discus products out that Pet WareHouse sells that are also RO/DI reconstructing buffers. Another approach that I advised people to use is the Tap Water Purifier by Aquarium Pharmaceuticals, INC. This is pretty easy to use, basically attach it to your faucet and place the other end in a bucket or trash can. This system comes with a pH and Electrolyte adjusting solutions that is specifically for Discus which brings the pH to 7.0 and buffers the system. There also the easy approach - you water is already low in pH and soft - leave it there. Another approach is using Peat. I strongly advise against running peat continually. The reason is, because discus need a once a week water change, if you are running peat through a filter and it give you soft water and lowers pH - then do a water change, you are pouring hard water/high pH water into the tank. There is one true fact about Discus- THEY DON'T LIKE SUDDEN CHANGES IN WATER CHEMISTRY. Doing his can freak out your fish. If you have no other choice but to use peat, then fill a trash can full of water and run a canister (or filter) on the water for a week - use this water for water changes. When the can is half gone, fill the can back up with tap water and continue to filter the water with peat. This way the water chemistry remains constant. The last way is with a Sodium Biphosphate or other pH lowering solution and a new product called SoftWater (Mardel).This also seems to work good by the margin for error is extreme and it is a delicate process.

TIP: It is also good to have a couple pieces of driftwood that will help soften the water.

THE FOOD

Feeding Discus is pretty important and the food that you give them is just as important. Discus are constant feeders, always hungry. I have tested many foods; frozen, live, flake, etc. There are allot of foods that endorse that they are Discus foods but although they may have the nutrition, Discus just don't seem to like them. The best method is to try many foods and get a feel for what your Discus like. Feed them a variety of different foods. Here is some Discus foods that I have tried and the results:

Hikari Bloodworms (Frozen) - This is by far their favorite. Big, thick juicy bloodworms - the best.

Hikari Bloodworms - (Dried) - O.K., but not as good as the frozen.

Hikari Discus Red Color Enhancer - This stuff is a sinkable pellet that turns soft in water but doesn't break up. It has mixed results - sometimes they'll eat it, sometimes they wont.

Coralife Bloodworms (Frozen)- Also a favorite but not as chunky as the Hikari.

Whattley Discus (Frozen) - This stuff stinks!! Discus hate it and not just mine.

Tubiflex Worms (Frozen) - Never tried the frozen or the live because of all the bad reports that these worms are bad carriers of parasites.

Wardley Tubiflex (dried) - They love this stuff also. Stick it to the tank and watch.

Nutrafin Discus Floating Morsels - This stuff is junk. It just floats and gets trapped in the plants.

HBH Formula 45 (Flake) - Now this is some good flake food. Discus love this stuff.

Coralife Beefhart - (Frozen) No good.

Other Beefhart - (Frozen) Mixed results - usually they like it.

San Francisco Bay Mosquito larvae (Frozen) - They like this stuff.

Brine Shrimp (Frozen)- They like it.

HBH other soft food - Mixed, sometimes they will pick at it.

Kordon Live Foods - They love them all, a real treat.

TIP: They best thing to do with frozen foods is to put a chunk it a brine shrimp net and run hot water over the food to melt it and get rid of all the excess junk before feeding. It is also good to get a worm feeder for blood worms.

DISCUS ADDITIVES

There are several on the market and I haven't tried them all. But what I seem to like best in the means of any additives is SeaChem Discus Buffer (for RO reconstruction), Liquid Gold for Discus by Thiel (trace elements), and every now and then I put a little Black Water Extract by Tetra (mainly for coloring the water a tea color). Although Black water Extract is probably not a necessity (especially if you don't like brown water) it seems to make the Discus a little bit calmer. I also use Stress Coat with Aloe. And every now and then I use a product called Ultra Clear for freshwater to add some nitrifying bacteria, although this is not a necessity. What you must have is some trace elements for Discus. If you use RO/DI then you must have some reconstructing buffer (although it is probably a good idea to use this any way. If your water is hard then you need to get some Soft Water by Mardel

TIP: I have also used FloraSan with good results on the fish and also plants. I believe although that you should use only half the recommended dosage - they want you to use to much so you have to go buy more later.

AQUASCAPING

Aquascaping is an important part of the health of a Discus. To many open spots and your Discus wont be comfortable. To few open spots and you get detritus traps. Discus like some safe dark spots in the tank (shelters). You can accomplish this with driftwood, plants, or even those plastic pieces of fake stick together rock that you can get from Walmart. When you aquascape there are many ways to get the look you want. The common practice is to place the larger long plants in the back with short one in the front. Also placing a big piece of driftwood in one corner with the limbs sticking to the center of the tank. As far as gravel, I like the natural looking gravel - using a 3 to 1 ratio of large pebbles and tiny pebbles and adding a couple scoops of white marble pebbles. If you

are not using and UGF then it is best to put about a 3/4 to 1" layer of gravel. If you are not using live plants then you can just cover the bottom of the tank for easier siphoning. I have hear that debarked beachwood works really well but I don't know what this is or where to find it or even what it looks like.

TIPS: As far as live plants - there are some ones that I have had success with and some that simply just rot. Live Plants - No swords - they turn yellow in temps above 80 degrees. Frill, Java Fern, Java Moss, Cobomba, Moneywart, Hortwart seem to do best.

Fake Plants - Get some good long ones and some short breeding ones - really depends on your taste and size of the tank.

Bubble Curtain - This adds that something special to the look of the tank, especially if you bury the curtain and hose.

Gravel - Get several bags of natural color shades and sizes, mix then all up and scatter them in the tank.

A powerhead - Rio 400/600 or an AquaClear 201 for added circulation seems to do good. Place this in the corner of a tank and point it to the middle of the tank.

LIGHTING

So say that discus don't like light and others say it doesn't matter. I say it doesn't matter and it all depends on what you like. I have tried a 36" bulb over a 55 gallon (48") to cover 3/4 of the tank with light and to give some dark spaces. I have tried to have two 48" bulbs (full spectrum and actinic) over the tank. And I have tried two 24" basic florescent light hoods with cool white bulbs (I later changed them out with some power glow bulbs). I see now difference except in the coloration of the lights themselves. The cool white make the tank a brighter whitish/yellow color (I didn't like it). So it really doesn't mater unless you have live plants then you need the 2-4 watts per gallon of light.

PICKING THE DISCUS

Look for good healthy, eating Discus in the local fish store. Don't waste your time getting a Discus that is under 4 inches. I have never had luck with these and they slowly waste away. Look at the gills closely to see if any of them are sticking out (bad sign). Also look for a Discus that show no black horizontal lines - this means he is happy. Good color is a good sign although when they get bigger there colors seem to change a little. Don't buy a discus with a swim bladder problem this is practically incurable. I have never bought a Discus from mail-order so I want say anything on that subject. There is a really good fish distributor in Daytona, Florida by the name of Reef. I believe that he is the most reputable and has the best looking Discus around, so ask your fish store person who he gets his Discus from.

TIP: It is also a good thing to ask the salesman what pH and water hardness that they keep their Discus at. I work in a fish store and I don't mind questions and neither should they.

OTHER FISH

This is a mixed story. Some say only Discus and nothing else others put Discus in with everything from Angles to Zebra Danios. I say that it is up to you, but remember there are only a few fish that can tolerate high temperatures. I personally keep a couple other shoaling fish and maintenance fish with my Discus. Mainly for shoals. Neons, cardinals, danios no, they are 74 degree temp and sometimes to small that the Discus will eat them. My Turquoise hate 100 Neons that I bought. Rummy Nose, Blood Fin Tetra's, White clouds, Cory Cats are all good shoaling fish. I also like clown loaches and pleco as maintenance crews.

THE SETUP (First 45 Days)

When you set up a discus tank you cycle the tank as normal with some hardy fish such as cory cats, white clouds, rummy nose etc. I first cycled my tank with feeder goldfish but this was quiet messy and dirty. I have heard of some people that actually cycled their tank with discus but I would strongly advise against this. Setup your tank with the aquascaping that you preferred. Add the filters and start them up. Add some decholinator to take out chorine/chlorimine and turn on the heater(s) up to 86 degrees.

Since the Discus wont be going into the tank for at least a month it is ok to start out with regular tap water and you use your purified water as the evaporation make up. Don't start to add any chemical as of yet, i.e., trace elements. Over the course of the month slowly soften your water, lower the pH and in the chemicals. Basically if you don't know how the cycle works then I would suggest that you start out with a nice community freshwater tank and skip discus keeping for awhile. I am not going to get into the cycling process because there are already go articles that can explain this much better than I. Check about one a week for the first few week on the pH, ammonia, and nitrite. Watch for the peaks. You can add a chemical call Ultra Clear to speed up this process (it cycle the tank in 7 to 10 days). When you get into your 4th and 5th week start checking/testing every other day. By this time you water should be at a pH close to 6-7 and have a moderately hard water. When all test (Ammonia, Nitrite) zero out the tank is cycled. At this time I like to do a 50% water change and sometimes even a 75-85%. Siphon the gravel really well and clean the walls of the tank of all the gunk build up. Take the next week to slowly lower the pH to 6.5 and soften the water (Softwater), watch the buffering range closely. Clean all the filters and check to make sure that the heaters are sticking at 86 degrees. If you want to, this is the time to add live plants. Finally, get that discus that you have been eyeing for over a month. Bring him home and get him into the tank. There are a couple of ways of doing this. Method 1 is just to take him out of the bag and flop him in. They tend to stress and turn black when you do this, sometimes even freak out and die. Another method is the floating of the bag for 15 minutes. Remember, you dont know where that bag has been. The 3rd method is to empty the discus and the water into a small container and place it below the tank. Then take some airline tubing and attack drip valve to it. Suck on the tube until the water starts coming out then turn the drip valve to where it drips at a rate of 1 drop per 3 seconds. Hang this over the discus container (with the discus in the container) and let the tank water drip into the container. This takes about 2 to 4 hours and is the safest way that I have found to acclimate discus Everyday you should get eye to eye with your discus checking him out. Look for any rapid breathing or discoloring (blackness) Look for broken fins and gills sticking out. Look for signs of ick or other types of disease. It usually takes about a week before they start coming to the front of the tank or eating. But once they start they really get to know you and they will be eating out of your hand in no time.

LATER MAINTENANCE AND KEEPING OF THE TANK

Discus need clean water and clean conditions constantly. It is best to do a 25-35% water change weekly. This includes siphoning out the gravel and removing decaying junk. Also it is best to clean the filters thoroughly and wipe the glass on the inside and outside to remove all the film. Do all your testing and add the appropriate chemicals slowly - remember discus don't like sudden changes. Everyday you should feed your discus about 2 to 3 times a varied diet. Watch that you don't over feed. I have also had good luck with a generous feeding one day and no feeding the next day. This helps the discus from becoming "spoiled" and not picking through the gravel for food. They think that if they get it from you then they don't need to hunt for it.

TIP: When you are around the discus tank move slowly, no sudden moves. This scares them bad. At the fish store where I work, we keep discus in a top tank so they aren't freaked out by the passing customers.

ENDING

Well this is about all the information that I have and although others have had great success with doing things differently I don't discourage them. As I had said in the opening, these are the things I did right and did wrong and the approach that I took. Over the past couple years I have had my share of good success. If you have any comments or questions and even especially any good tips please e-mail me and let me know. I hope this helps some of you new discuskeepers on a thoroughly enjoyable road ahead.

Thanks,

Dallas5@aol.com

reprinted from the net

RAISING DISCUS ARTIFICIALLY

by Tony Silva, Staff Writer
Edgewater Valley Aquarium Society

This problem has been encountered by many. When Discus were first bred in captivity, one problem was quickly encountered in that their eggs could be hatched, yet the fry would never eat the first foods offered, so the people's hopes were gone. And so for years to come, one heard of a spawn being raised here and there, yet even to date not many (just a handful) have successfully raised Discus commercially. Probably the most successful breeders are the Asians who can produce huge amounts of Discus yet not the colorful ones. This is being done by Americans, who are the people that raise the most Discus artificially. In the Orient, they are parent raised and the same goes for Germany.

No one can really pinpoint as to who was the first to raise Discus artificially. I believe that probably Carrol Friswold and/or Jack Wattley. Jack found the method after much work and dead fry, to be able to raise Wattley's Turquoise Discus commercially. It was probably in the 1970's or so that Jack started selling the fry commercially. The price was around $100.00. At the moment retail price is about $15.00 to $25.00 each. One word of caution: many people have taken advantage of Discus fanciers as no one can tell the difference between the many kinds. Either buy from a reputable breeder or pet store dealer.

Carrol Friswold, a few ;years ago, started selling a booklet on raising Discus artificially, growth is slow and many authorities claim that, and I agree, that fish which are raised artificially are not good parents nor are they able to produce large amounts of slime to feed their fry. Growth is slow as already mentioned. A breeder, that I know, sells these fry when 120 days old and are only the size of a dime to a nickel. But for fish which are hard to breed, artificially raising of the fry is best. Generally, the larger the parents, the larger the fry. The easiest for me to raise artificially are Heckels, who produce extremely large fry. Well, below is the different methods used and a method which I developed that required little work to raise the fry artificially.

The method that was described by Louis Saphian of St. Louis was feeding the fry newly hatched brine shrimp strained thru a man's handkerchief to produce the smallest of the small. This was then fed to the fry who ate it willingly. Well, there's only one problem, the mouth of Discus fry is on the bottom with lips facing downwards much as Juruparies. This is for easy feeding when swimming around and feeding on the parents. I have raised a few fry this way, but the water level must be very low so the fry can eat.

The next method is much like Carrol Fiswold's method with variations. The fry are hatched like angel fish using the various chemicals, either one of the below: Aquaflavine, Methylene blue, ACS, Lactated Ringer solution, etc. Follow instructions on bottle for dosage. Also, wigglers must be removed as soon as they hatch and put in fresh water, otherwise they will get poisoned (except for ACS or ringers.) They won't die immediately, but days or even weeks after and they apparently look great with no signs of what could cause death.

Also light is important. I leave a weak light on when the parents are feeding so they can see the food and not swim away and die in another spot of the aquarium.

Hatching to wigglers takes 3 days and to free swimming 3-4 more days; a total of 7 if raised artificially. Food should be supplied 3 hours or so after free swimming. If they are being parent raised they will try to swim to the parents, but will get put back. Finally the parents will take a few at a time, take off and start swimming and feeding the fry from the parents' sides. Generally it is the tail, upper half or head area they like to feed most from. The parents, at this stage, will very likely eat their fry over disputes as to who will feed the fry first. One fish will face the other generally at the middle (much as a T formation) and shimmy. This will call the fry. The other fish will also shimmy and at this point the fry are afraid and don't know where to go, so they stick and turn darker and as close to the parent as possible. Also, when the fry are being called, the body is dark and the face is lighter. This is the same when tending eggs or fry.

The food formula for being raised artificially is basically the same formula for everyone. Just with additions such as Tetra-min. Agar Agar, etc. The egg yolk used is called Confectioner's powdered egg yolk, which can be purchased from bakers and confectioners. It's qualities are different when wet. It becomes sticky and coagulates not crumbling and falling apart. also it is a flour like fine powder. It also has a fungus retardant which can make the egg yolk stay good for a longer period. The fry at this time are wigglers and ready to become free swimming.

They are housed in a shoe box with a 1/2 inch of water. One of the corners was cut and fine window mesh and glued (with aquarium cement) in there.

Fine pancakes are made with little water, just enough to form the cakes then moved 20 minutes after feeding to a different shoe box which has been prepared in the same way. They must be put in clean water or they will die from the bacteria formed by the egg yolk. While feeding there should be no aeration. While they are not, a small, weak airstream is recommended.

Floating the shoe boxes is best. Cement a few pieces of styrofoam on each side. This will keep the boxes floating. A 10 gallon long or 20L works best. Use a sponge filter. The tank water can be used. 87 to 90 degrees is recommended. This will increase the metabolism of the fry. Make sure that the sponge filter used was previously in another tank and has an active rotifer growth.

I wait 3 hours after they are free swimming before feeding. I would feed the pancakes so they stick 1/2 way out of the water. It will help it stick better if you wet your finger and make the pancake. Place a few of these, say every few inches from each other. As you will note, fry congregate in schools in spots where they feed. It's a waste of time to place food in other places. Once you know where they feed, place the food there. After an hour of feeding, note the belly of the fry will look yellow from the egg yolk. Also, at this time change the fry with a baster or a syringe to the other box that has been set up in the same way and aerate. Feed 5-6 times daily. At the end of 5 days work, start feeding newly hatched brine shrimp. The death rate is high and a breeder is lucky if he raises 70% of the hatch.

Discus spawns are small, numbering on the average of 100 to 150 eggs. Growth, as already mentioned, is very slow on artificially raised fry while parent raised, they would reach nickel size in about 6 weeks. Also, the idea is the same. When parent raised, they will also begin eating at 5-6 days. At about 18 days, they are big enough to be removed to their own tank. Temperature 84 degrees F, water 1/3 fresh, 1/3 aged, and 1/3 from the parents' tank. The tank size recommended should be a five gallon. When larger they can be moved to larger quarters, or they can be left with the parents until nickel size. Generally if removed, the parents will spawn and raise another batch.

While artificially raised, after a few days they can be moved to a tank. They are kept in this sized tank so they can find their food easily. A sponge filter is used. This will not pull the fry in and kill them and the fry will also eat the rotifers. After 4 weeks, they can be fed fine powdered Tetragon, liquefied beef heart, etc. Also whole tubifex should be offered and if eaten will speed up growth. They eat this by sucking it up like spaghetti.

Heckel fry are quire large. Most fry vary in size. The larger the parents, the larger the fry will be. Also, during this time the fry are given 1/3 water changes weekly. Also, because the parents are raising their fry it doesn't mean things must change. They are given water changes, etc.

If one plans to parent raise their fry, as bare a tank as possible, as the fry will get stuck and die. If the parents raise their fry after they become wigglers - they will be generally moved and mouthed frequently to be kept clean. Don't panic when they do this as it is normal. Don't think they are being eaten. When they don't come out or get spit back on the slate, that is when they get eaten.

As to picking out your new breeders, pick out fish with large dorsals and perfect round shapes. Never when they are oval. Also, pick out perfection. Never large eyes, etc. Raise a dozen or so and pick out the best. Try to never breed garbage.

Also, if at the age when they are supposed to breed, no signs are shown, pick out what you believe is a pair and separate them to see if they will breed. Many times they will breed after being moved. This must also be kept in mind.

Reprinted from: Brooklyn Aquarium Society, May, 1980.

Working With Wild Discus

by Basil Holubis NAS

After having no success in my previous attempt to spawn the King Of Flat Fish, I have decided to start at the top - spawn wild fish -hopefully!

This may be a more long-term project. I've read articles reporting up to 2 years before any spawing. But I have already have 2 years invested in my Altum angles, so I will just call this a labor of love. I have very hard water and have been collecting rain water for my Altums, and am now set up for large water changes - 2 plastic 55 gallon drums are my holding tanks (airstones and bags of peat moss) Rainwater here is a ph of 7 and must be taken down to mid 6.2-6.4 range.

Now about the fish, after looking at fish for months and hearing all kinds of names. Red Dragons, Marlboro Reds, (who names fish after a cigarette). Pigeon Blood ? Asked my opinion of this fish I told the owner to medicate these fish. These fish look sick to me, washed out, no color. Are these fish someone's cull's that escaped? I read every new discus book,more crosses, more confusion.

Finally what made up my mind was a road trip with Charlie Grandel down to a meeting of the Brooklyn Aquarium Society to hear Marc Weis speck on "collecting wild discus" , if you ever get a change to attend a Brooklyn meeting do it, they always try to provide the best speakers on every subject and have a very friendly membership. We sat and listened to Marc Weis but the slides of wild fish, some even in collecting buckets or nets were what sold *us* on wild fish. Just remember all those fancy strains came from just four colors, wild brown, green, red, blue. Don't forget your roots! The ride home was filled with discus talk. We now had a mission, obtain wild fish.

Finally we stop at World Wide pets and talked to Marvin (POP) of the father and son team. Soon joined by Peter (the son),we talked discus for an hour, I spoke of wild fish and Charlie reminded me of the "S" word, Singapore! Since the Angel fish plague, nothing from there is allowed in my fish room!

About a month later, on a visit to the store Pop was all smiles, he walked me over to a 40 gallon tank with 8 wild green discus in it. About 3-1/2" in size, they all looked healthy. Pop puts his hand in the tank and almost starts to pet them! Pop told me they had been in the store about two weeks and there has been no losses. What I like is that Marvin treats wild fish with a formalin/tetramycin combination, this helps to "clean up" any problems the fish brought in from the wild.

We made a deal and I went home to set up 150 gallon tank for my prize, and also tell the wife we will be eating a lot of hot dogs for the next month. Once home the fish settled in and seemed to be happy. The only problem was food, Marvin feeds live black worms and wild fish love them. I don't, I fear disease, I act like it's every where (it maybe). I have fifty tanks and to medicate them all would cost a mint. I use frozen bloodworms to start, mixing in flake and my frozen foods. Homemade and venison heart, that's right, Bambi, not beef, no steroids or antibiotics.

These fish now eat anything, after almost nine months I think I have two pair. I have no regrets, these fish are beautiful and are as personal as any cichlid, they don't hide, they are not skittish and to watch them school together is a pleasure. I just hope they want a larger family.

Maybe I'll have to look for some wild reds next, you know for my wife's birthday!

Do you know of someone who wants to start up an aquarium, help them out and tell them about the club, and bring them along.

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