AQUATICA

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106 Years of Educating Aquarists

AQUATICA

Vol.31 SEPTEMBER-OCTOBER 2017 No.1

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CALENDAR OF EVENTS ~ 2017 - 2018

2017

SEP 8 Joshua Wiegert - Brackish Water Species ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
OCT 13 Giant Fall Auction ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods, including a brand new 55-gallon tank & stand.
NOV 10 Joe Yaiullo - Marine ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
DEC 8 Holiday Party ~ Members, their families and friends • Fish Bingo & Prizes • BAS awards presentations.

2018

JAN 12 Joe Uaru - King of DYI ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
FEB 9 John Coppolino - Building my dream system - 1300-gallon SPS display ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
MAR 9 TBA Freshwater ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
APR 13 TBA Marine ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.
MAY 11 Giant Spring Auction ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods, including a brand new 55-gallon tank & stand.
JUN 8 TBA ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

NO MEETINGS JULY & AUGUST

SEPT 14 TBA ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction
OCT 12 Giant Fall Auction ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods, including a brand new 55-gallon tank & stand.
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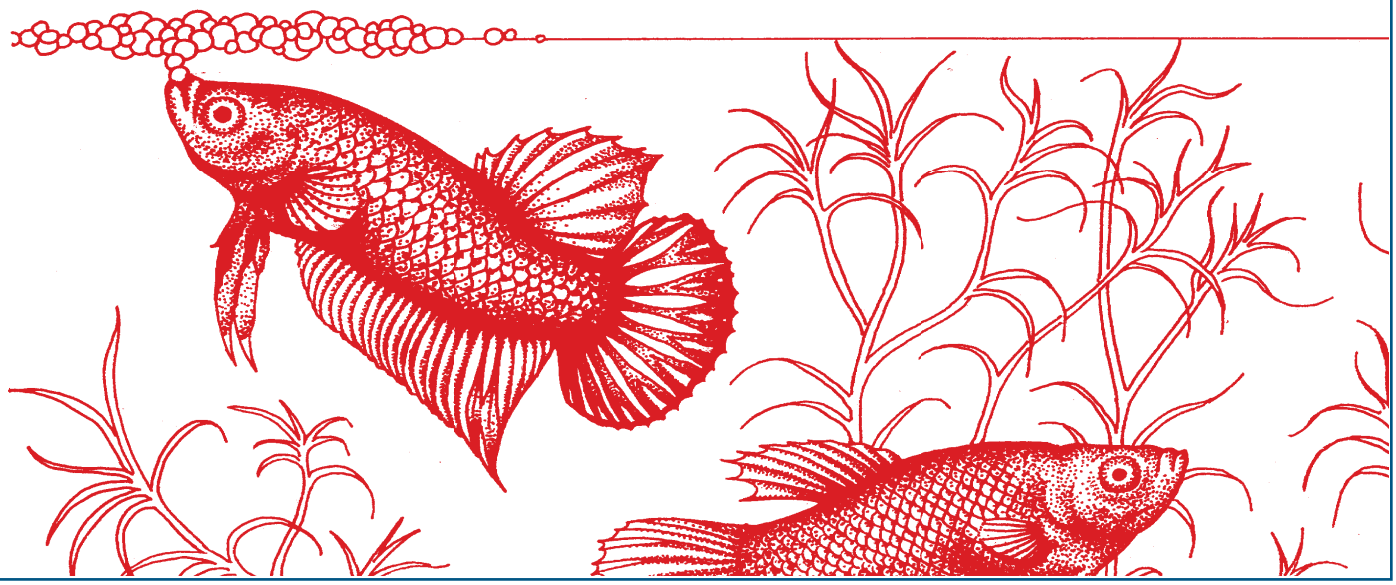
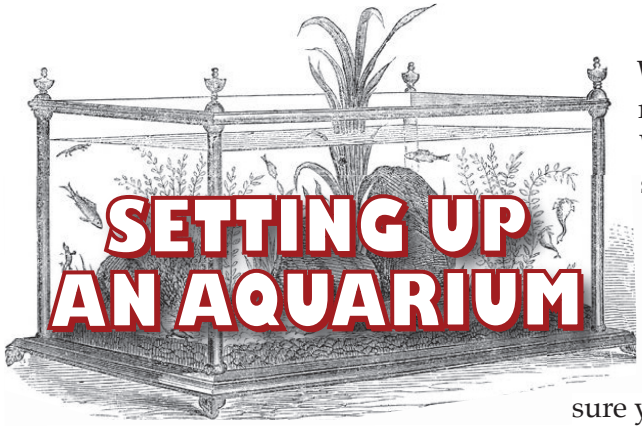


Steven Matassa – BAS

SETTING UP AN AQUARIUM



Setting up an aquarium can be easy if you follow a few simple steps. I will guide you through methods that have worked well for me over the years. I have maintained aquarium fish for over 40 years, and have picked up a few tricks along the way. I made a few mistakes, but have had more success than failure and would like to share what I have found that worked for me.

The first: to consider is your budget. Do your research first; don't buy on quick impulse. Shop around and try to find the best deal. Local clubs are great to pick experienced hobbyist minds on such things as good filters and lighting.

The second: is the size available for your tank. Most hobbyists start out too small and then go to a larger or a second tank. Try to buy the largest you can fit and that is in your budget. Measure the size you have and allow for at least 4 to 5 inches all around the tank sides. Tanks too close to walls tend to heat up in the summer and the glass is a pain to clean. General rule: if it is hard to clean, you probably won't. Also stay out of direct sunlight unless you are trying to raise algae. Tanks do not need a lot of light with the exception of planted or reef tanks. Most tanks can do fine with just a couple of hours of light. Invest in a timer for the lights and set it for when you will enjoy viewing the fish.

The third: is making sure your floor can support the weight. Aquariums average about 10 pounds per gallon, so a 30-gallon tank can weigh approximately 300 pounds. The stand or cabinet must also be able to support that weight. Make sure it is of sturdy construction.

The fourth: is one that many hobbyists overlook - leveling the tank. It must also be leveled in both directions, front to back and side to side. Unleveled tanks will probably end up leaking due to uneven stress on the seams. They can even burst. Even a ten gallon tank can have a lot of water on your floor. With metal stands, I like to use metal fender washers to level. With wood cabinets, I use wood shims. Make sure to shim and support the cabinet from end to end. I cut the shims after I have some water in the tank, to allow for settling.

The fifth: is electricity. Make sure your outlets can handle the load of the tank. Make sure there are not a lot of other electrical items on the same circuit. If you are not sure, have an electrician check it first. There are debates on whether to use a GFCI outlet or not for tanks. It is the municipal code that any outlet within 5 feet of water must be protected by a GFCI outlet. Some would say it can trip and cause power loss, which can result in fish loss. Not having one can result in human loss; your choice.

The sixth: consider the cost of equipment against the operating cost. Some lighting, filters and pumps can cost more in the beginning, but save you on electricity over time. Lighting choices are incandescent fixtures, florescent fixtures, metal halide or LED's. LED's are the future in lighting, in my opinion. Not only do they cost much less to operate, they also generate very little heat compared to any other types of lighting. There are even water DC pumps that cost less to operate, are quiet and have variable pressure outputs. It may not seem like a lot now, but when you are operating several tanks, it adds up. I know; I have about 10 tanks

The last topic I like to talk about is maintenance. Water changes have to be done to keep fish healthy and alive; I don't care how good your filter is. I like to do about 25 % a month, whether it is one 25% a month change or divide the water change and do half that twice a month. Some do weekly water changes of 10% of the aquarium's volume. Whichever you decide is fine as long as you perform those changes on a regular basis.

I hope I was able to give you some good advice in setting up an aquarium.

Good luck and happy fish keeping.

Anthony P. Kroeger – BAS

3 BLIND CAVE FISH! ISN'T THAT MICE?

Keeping and spawning blind cavefish *Astyanax mexicanus*

Blind cave fish used to be considered a separate species named *Anoptichthys jordani*, but DNA confirms it is a mutation of *Astyanax mexicanus* that lives in total darkness in underground caves in Mexico. Both mutations will hybridize and produce fry with various degrees of functional eyes.

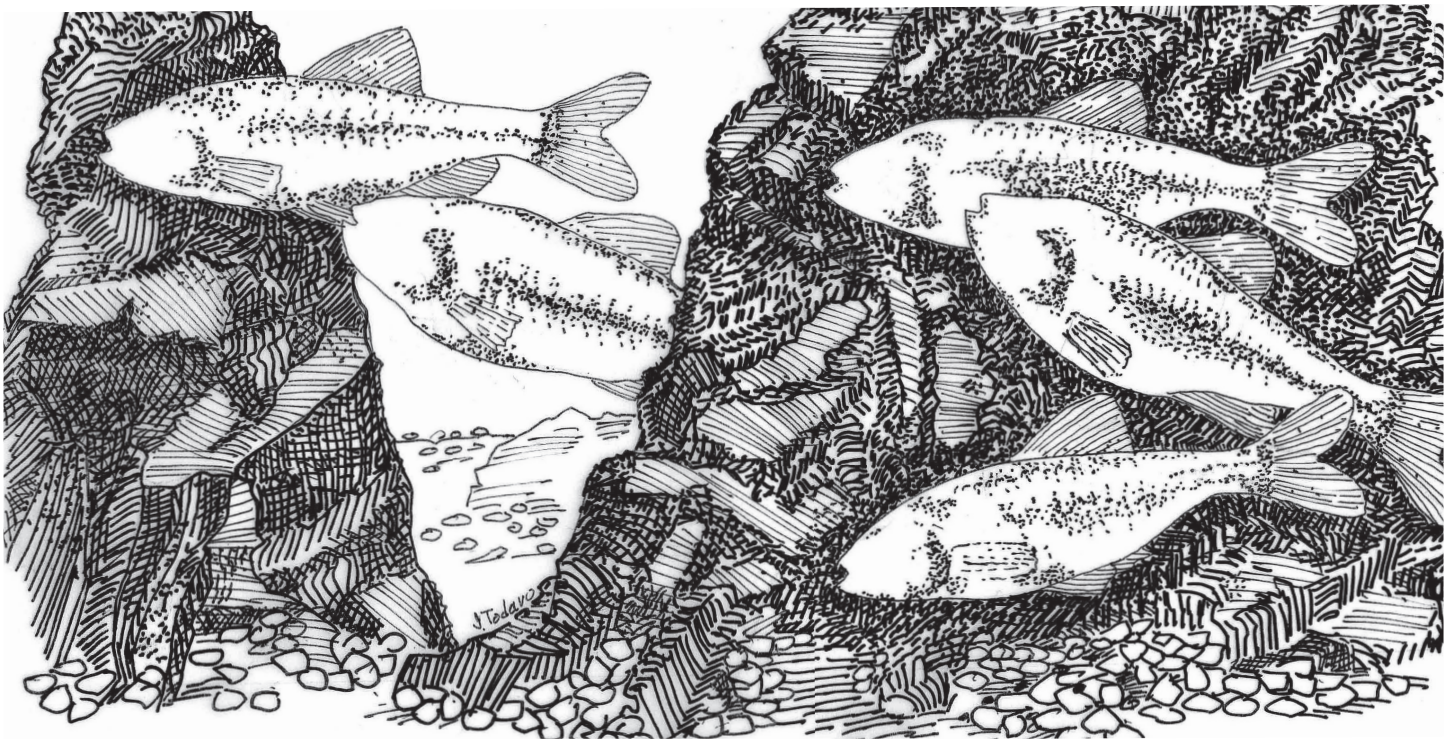
As is, however, pure blind cave fish mutations have no functioning eyes and are truly blind. This is definitely an oddball fish!

That does not mean that this fish is helpless however; its senses of smell, touch and taste are much more developed than those of the above ground species.

The fish never takes a back seat to any sighted fish at feeding time and easily competes with even fast aggressive feeders like barbs.

Native to caves in Mexico, this fish reaches 3" inches, and is commonly available at cheap prices. Its color is pinkish/white, and it has no eyes.

A 20-gallon tank is fine for a school of 6. Use sand as the substrate and a small power filter.



Decorations are for your benefit not the fishes,, as it cannot see them. However they do remember them! A blind cave fish will only bump into an object once, then they will remember its location and not bump into it again! It's amazing that they can do this.

Any tap water at a temperature of 74 - 80˚F is fine. Change 25% of their water weekly. Any food that fits in their mouth is readily eaten. Food is scarce in dark caves, blind cave fish are not picky, They will eat from the surface, mid-water and bottom. They root in the substrate for choice morsels frequently.

Blind cave fish are very active fish, constantly swimming end to end in their tank and up and down. This fish is a bundle of energy. Do not keep them with slow moving angels, since it is also a fin nipper.

Breeding is easy and straight forward. Sexing a pair is easy. The males is smaller and much more slender. Separate your pair for 10 days.

Fed them heavily on high protein foods during this time. I feed my breeders frozen bloodworms, frozen brine shrimp and frozen glassworms 3 to 4 times a day.

When conditioning, change 50% of their water every third day. For a breeding tank I use a 25 or 20-gallon long. Cover the bottom with 3 to 4 layers of glass marbles. The parents are avid egg eaters and will eat their entire spawn if they can reach it. The eggs are non-adhesive and will fall safely between the marbles. That way the fish cannot eat all the eggs before they sink between the marbles.

Hard, alkaline water at a temperature of 78˚ to 80˚F is best. Do not use plants, they are useless. Do add a single airstone. The pair will spawn within 24 hours of being introduced to the breeding tank.

The female will spawn after an intense chase by the male throughout the entire aquarium in typical side by side tetra fashion.

After they separate from spawning the eggs will be scattered everywhere by the breeders. They will eat any eggs that do not make it to the safety of the marbles first! It's amazing how fast these fish can turn and eat their own eggs on the way to the safety of the marbles, hence the need for a low water level in the breeding tank; 4 to 5" inches is best.

Spawns are usually large: 300 to 500 eggs. The eggs hatch in a few days and are easily raised on crushed flake food and frozen baby brine shrimp. The fry grow fast.

For a unique fish with very interesting behavior, try some blind cave fish.

Happy fish keeping and breeding.

Tony

Jeremy Phillips - MAS

Reprinted from *Michiana Tropical Times* September 2016

Planning for Failures Using FMEA: Designing a (Near) Fail-safe Aquarium

All of us can think of one time or another where Murphy's Law kicked in with our aquariums or fishrooms. The power goes out for an extended period in the winter, a heater malfunctions and fries the tank or you forget to add dechlorinator to your new water. It happens to the best of us from time to time (and some of us much more frequently than others). Imagine if you were able to eliminate any issues that you may encounter with an aquarium just by planning for them (gasp! Planning?).

In the realm of product design and engineering, a technique called "Failure Modes and Effects Analysis," or FMEA, is often used. A failure mode is a particular way in which something may fail. For example, smartphone batteries may be prone to catching fire if manufactured incorrectly. Another failure mode is that they may instead just quickly lose their charge. Although this is a dramatic example, which would you prefer to happen? FMEAs are used to evaluate potential areas where a device may fail and prioritize them such that you can help prevent the most prominent failures from happening. Using this analysis allows you to review weaknesses in your aquarium system and determine the best way to try to mitigate the risk of a particular failure type.

A **Failure Mode Effects Analysis** is broken down into different steps:

- List where a failure could happen in your aquarium (heater fails, power goes out)
- Determine the effects (or severity) of the failure (heater fails on –cooks the fish; heater fails off- they go to room temperature)
- Determine the probability of the failure mode happening and the mechanism that could cause them to fail (how often do you hear of heaters failing? Why does it typically happen?)
- Evaluate how easy is it for you to be able to detect the issue before it occurs (Can you see that heater starting to fail? Corrosion?)

Using these steps, you can begin trying to evaluate whether or not it is important for you to try to reduce the risks of that particular failure from happening. As we discuss each of these steps, an example will follow so that you know how to make your own analysis!

Listing Failure Modes.

So how can we come up with a list of potential failure modes for an aquarium? Start with what you've heard other people experience in the past. The idea is to generate a list of 'maybe this could happen' so that we can look at the potential of these things happening, the effects they cause, and what we have put into effect in our tank systems to prevent them. I began the article discussing heater failure because it seems to be a fairly common occurrence in the hobby (one with particularly disastrous results for your fish and potentially the fishkeeper as well in the case of a full electrical short). Power failures could also be listed in this category as well. Other smaller things that one may not typically think about as well could also be included that may have significant effects such as a death of a tank inhabitant causing an ammonia spike. Or due to being sucked up a filter intake, the fish causes a filter blockage. General pump failures, tank cracks, lack of maintenance and many other things could be listed as a potential failure for your aquarium.

Below, I've included a template for us to fill out as we go. For our specific failure examples, we'll use the risk of a heater stuck on and a filter blockage.

Failure Mode	Severity of Failure	Occurrence (Probability)	Detectability (Controls)	Risk Probability Rank (Highest is worst)
Heater Failure (ON)				
Filter blockage (<1 day)				

The Results of Failures.

So now that you have your list together, what would happen if each one of these items happened? If your heater fails on, will it completely melt down your tank? If a fish dies in the tank, would it cause an issue, or would the filtration be able to handle the additional ammonia? Many of these things we may not know an exact answer, but it helps to list a realistic 'worst case'. Just because a filter fails on doesn't mean that the entire tank will crash; it might be fine for a couple of hours, but probably not for a couple of days if the tank has a heavy bioload. You could even break it into two or three possibilities to see which of the scenarios would be best planned for.

In our FMEA, we add a number (ranking 1 to 5) for the severity of the failure if it were to happen. But where do we get our numbers? I've included a ranking list below for reference. For a heater failure, you may have a slim chance of catching it, so we will rank this item as a 4. A filter blockage could be a 3 for heavy bioload tanks fixed within a day or less if you have a minimally stocked tank.

Severity	Immediate/complete tank failure	5
	Significant tank failure; slim chance of quick repair	4
	Failure, but able to fix if caught, minimal damage	3
	Failure, but no issues if left unfixed	2
	No effect	1

Failure Mode	Severity of Failure	Occurrence (Probability)	Detectability (Controls)	Risk Probability Rank (Highest is worst)
Heater Failure (ON)	4			
Filter blockage (<1 day)	3			

Once a week or once in a lifetime?

How often do you hear of this issue happening? Is there a good chance that your ten year old cheap heater will quit in the on position? Or maybe it is a brand new electronic heater that 'says' it won't fail in the on positon? This may be a much harder number to determine, but if you've heard of it happening to someone, in our case you might as well try to plan to prevent it, or find a way to catch it before it happens. These numbers are also harder to come up with in our case since we can't really test our parts like we are manufacturing a product, so we have to go by what we've heard from other aquarists and use our best judgment. The ranking list for occurrence is listed below. We're talking about that cheap heater in our example case, which maybe at least looks clean (no inner corrosion), so we'll rank it a 4. The filter could possibly clog, although not as

probable as a heater failure, so we'll say a 3 for that one.

Occurrence	It has a good chance of happening soon	5
	It could probably happen sometime	4
	I've heard it happened but not likely	3
	I've olny heard it happened a few times	2
	I've heard it happened once, never	1

Failure Mode	Severity of Failure	Occurrence (Probability)	Detectability (Controls)	Risk Probability Rank (Highest is worst)
Heater Failure (ON)	4	4		
Filter blockage (<1 day)	3	3		

Could you fix the issue in time?

So you notice that your tank heater failed. How soon do you notice it? Was it when the tank was a couple of degrees above normal, or because the fish were already belly up? We can't always be there to make sure something wrong hasn't happened (we do have to sleep sometime). In the case of the filter, maybe it is much easier to fix if we make sure we do a daily (or more) visual check. So for the heater, we'll again use a 4 as things could go south quickly and for the filter we would rate a 2 if we are doing daily checks.

Detectability	Unable to detect before it happens	5
	Slim chance of repair before failure	4
	Might be able to see and fix it	3
	I'll see it before it fails (small chance of failure)	2
	Safety feature to prevent happening	1

Failure Mode	Severity of Failure	Occurrence (Probability)	Detectability (Controls)	Risk Probability Rank (Highest is worst)
Heater Failure (ON)	4	4	4	
Filter blockage (<1 day)	3	3	2	

Adding it all up.

So now that we have generated the values in each column, multiply the three numbers in each row to get your final risk probability rank. The higher the value, the more you should pay attention to that particular failure mode. In general, any failure mode with the value of 30 should be looked into. Or if any column has a 5 it should probably be addressed soon and a solution to the problem provided. Of course, just like a business can be willing to take a risk, so can you with your tank. If you personally feel it is ok to lose the twenty bucks worth of fish in your tank instead of buying a heater worth more, you have the right to do so. That saltwater tank loaded with coral or your prized tank full of discus might be more worth spending the extra time and work into preventing that failure.

Failure Mode	Severity of Failure	Occurrence (Probability)	Detectability (Controls)	Risk Probability Rank (Highest is worst)
Heater Failure (ON)	4	4	4	64
Filter blockage (<1 day)	3	3	2	18

Mitigating the risk.

So you've found some failures with a higher number than you would prefer to ignore. The next step is to plan on solving the issue. You can do so by solving the problem in any of the three categories. For plumbing issues, a second overflow could prevent that tank sump pump from emptying into the floor on your hardwood floor and reduce the occurrence. Even just adding a leak detection system used for washer and dryer systems might help decrease the detectability number for a tank leak. For our heater example, a heater that will not fail in the on position would eliminate the severity of 5 down to a 2 or 3 as you tank would only get cold.

Hopefully some of you find this article useful. This can be applied to many different things (tank filtration, automation, lighting, etc.) so the list of failures could get very long. Why not try to plan for them ahead of time so you don't have to worry as much about losing your show quality fish and beloved pets?

DISCLAIMER: I have provided this article as a tool to teach as many people as I can how to effectively prepare for tank failures and prevent the loss of tank inhabitants. This is by no means a comprehensive and complete document and is provided as-is. I am by no means responsible for any failures that may happen in your tanks because you fail to list it while planning!

Anthony P. Kroeger – BAS

TANGANYIKAN ROYALTY

Tropheus in Your Tank

***Tropheus moori* and *Tropheus duboisi* are arguably the most popular Tanganyikan cichlids that aquarists keep. They also are some of the most challenging.**

These cichlids come in multiple beautiful color variants and patterns. The pattern even changes between juvenile and adult in *T. dubosi*. Between those two species every color you can think of is represented: red, yellow, white, black, blue, orange, green, you name it and a *Tropheus* species has it covered.

Patterns in *Tropheus moori* vary widely from stripes to bands to swaths, to spots. People buy *Tropheus* for their beautiful colors!

Both these species are native to Lake Tanganyika, *T. duboisi* growing to about 5" inches and *T. moori* to about 6" inches.

Tropheus are challenging to keep and very particular about their water quality and food.

Water for *Tropheus* must be hard and alkaline 8.2 for pH and hard water 12 - 24° hardness, temperature should be between 74° to 80°F. No measurable ammonia or low nitrates. They will clamp their fins, itch and shimmy if their water quality is not to their liking. I have had people tell me these fish like large volume water changes, but I do not find this to be the case in my experiences. I change 15% of their water every other day. Such water changes do not take long and I find the fish clamp up and stress much less than with larger volume water changs.

Feeding is another challenge. *Tropheus* are basically vegetarian fish, grazing on rocks covered with algae and cyanobacteria in their native habitats.

Feed all *Tropheus* species spirulina flakes,

pellets, frozen vegetarian foods and fresh or frozen protein foods of any type in very sparing amounts only.

Tropheus have a very long digestive tract, One of the biggest problems with *Tropheus* is "bloat." This is especially prevalent with wild caught fish. Bloat is usually associated with too much protein in the fishes diet or pathogenetic flagellates in the dietary tract.

If a *Tropheus* has a distended stomach, exudes string white feces, clamps its fins, sways or rocks in one place and is feeding poorly it is suffering from "bloat."

Any *Tropheus* suspected of having bloat should immediately be isolated in quarantine and fed fresh greens and spirulina algae only, kept warm at 80˚F and treated with a full dose of Metronidazole. If this bloat is not too advanced this regimen will usually help to recover. Be sure to keep any bloat suffering *Tropheus* in exceptionally clean and high quality water.

All *Tropheus* love fresh green veggies, peas, green beans, kale, and zucchini slices. *Tropheus* especially love broccoli stems and stumps! Do not feed them the floral heads.

Tropheus also like carrots and spinach at any time. I add blended garlic cloves and paprika to their spirulina flakes. These seem to enhance color and boost their immune system as well. *Tropheus* fed these last two items with spirulina flakes seem to have less "bloat" problems provided their dietary and water quality needs are met.

All *Tropheus* need room. Even juveniles. All *Tropheus* species are brutally territorial in nature and highly intolerant of their own kind. Forget about keeping any more than a single *Tropheus* in less than a 55-gallon aquarium. You can keep a small group of six juveniles in a 55-gallon tank, but as they grow they will need more room. For a shoal of six adults I recommend at least a 125-gallon tank. Use lots odd rocks arranged to make plenty of caves, tunnels and hiding holes. PVC, slate, and flower pots work just fine.

Use a very high capacity power filter or canister filter to maintain exceptional water quality and sand for substrate. Plants are unnecessary.

Keep the lighting bright to encourage algae growth which your *Tropheus* will gladly feed on. Cover their tank; they are not great jumpers,but still why take a chance, especially considering all *Tropheus* are expensive to buy.

Tropheus are too territorial to be considered community tank fish. They have no problems savagely attacking or even killing each other. Bullying is a very common problem. If a badly bullied *Tropheus* is not removed, it will usually end up savagely beaten and eventually killed. Battered *Tropheus* should be removed immediately!

That being said, *Tropheus* usually will tolerate and get along well with Tanganyikan goby cichlids, *Eretmodus* and *Petrochromis* species. This combination makes an interesting Tanganyikan community tank. Never put *Tropheus* with any shell dwellers. You'll soon have only *Tropheus* if you do!

Tropheus do not tolerate each other well in confined shipping bags. Put even juveniles in together in a small fish bag and usually by the time you get home one will be dead, or at least badly beaten. When buying *Tropheus* of any species always ask for them to be bagged separately! This will insure your new *Tropheus* arrive home alive, healthy and in one piece.

All *Tropheus* species are mouthbrooders. Their eggs are very large and the fry very few. 4 to 15 eggs are not unusual. Fry are very large and take crushed spirulina and algae immediately. Recently both *Tropheus moori* morphs and *Tropheus duboisi* have become more available through Far Eastern commercial breeders, particularly Taiwan.

These commercial breeders employ a bare tank "crowd breeding" method of production. A completely bare tank with heavy filtration and small daily partial water changes is used. A group of breeders [15 to 20 fish] are crowded into a 55-gallon tank.

This bare tank allows no territories to be staked out and because the fish are so crowded no single fish is battered too badly as a different fish is bound to attract the alpha bully's attention first.

I've seen *Tropheus* kept this way and it seems to work well for breeding but, it negates a lot of interesting behaviors that you would see in a more natural rock filled environment.

The two species of *Tropheus* you are most likely to see in stores are *T. duboisi* and *T. moori.* Expect to pay a premium price for both. Low fecundity and high popularity of these species means you will always pay a high price for them especially for new color morphs of *T. moori.* And needless to say wild caught fish will carry an even higher price over F^1 or captive raised specimens. When purchasing any *Tropheus* always ask to see the fish eat before buying it. never buy any *Tropheus* that is not eating. It could well have "bloat" problems."

Always quarantine all *Tropheus* species 14 to 21 days post purchase to insure they do not have bloat and do not introduce such to the *Tropheus* you already have.

Anytime you introduce a new *Tropheus,* be sure to rearrange all the rocks as soon as you introduce the new fish; this will disrupt any established territories and give your new fish a fighting chance to establish its own territory in all of the confusion.

For lots of color in *T. moori* look for the "Firecracker," "Red Rainbow," "Ilange" and "Mpulungu" morphs.

An unusual *T. moori* is the "kaiser II." This fish is basically black with a bright yellow broad band around it.

T. duboisi is black with blush/white polka dots all over as a juvenile. Adults are blueish black with a broad yellow/white bar along the side, with a reflective blue head. There is simply no mistaking a duboisi for any other fish. .

When you get your new *Tropheus* home be sure to gradually acuminate them to your water. Remember these cichlids do not like sudden or rapid environmental changes.

Neither should you feed them the first day. let them adapt to your water quality first. Take your time with everything you do with *Tropheus.*

Tropheus species are challenging to keep, but taking up the challenge is well worth it. Their beauty and behaviors are both outstanding. I do not recommend any beginner try *Tropheus*, they are simply to demanding in their requirements. But for any moderately experienced aquarist who has had experience with rift lake cichlids he challenge will certainly be rewarded with incredible colors and very unique behaviors if you give theis fish what it needs.

Take the challenge! Try some *Tropheus* today.

Happy fishkeeping!

Tony

John Todaro – BAS

From the Brooklyn Aquarium Society's publication
SCRUMPTIOUS MEALS & LIVE FOOD TREATS Compiled, Edited & Written by John Todaro

Guppy Color Blend Paste Dinner

Searching for great color in your guppies? Here is a recipe from *Guppy News* by **William Driscoll.** He designed this recipe with hopes of growing and coloring up guppies fast.

According to William, in his search for the best guppy food, he hoped this recipe would increase growth and intensify color and also decrease the percentage of sterility.

William carefully recorded the results of his recipe and here is what he found.

At three months the growth and coloration for guppies fed exclusively on this formula was excellent. But at five months, it was determined the growth difference of guppies fed this recipe was insignificant, but coloration was more brilliant than those fed other foods.

So, if brilliant color of your fish is your goal, along with a good solid fish food, your search is over.

Reprinted from the April 1973 issue of the Brooklyn Aquarium Newsletter.

RECIPE

WHAT YOU WILL NEED:

INGREDIENTS:

4 packages of dry yeast
1 qt. of blended haddock roe
8 tsp. of cod liver oil
1 jar of Gerbers® strained green string beans
4 tbsp. of paprika
Salmon egg meal

DIRECTIONS:

Mix all the ingredients in a blender to a paste.
Add salmon egg meal to thicken the mixture.
Place blended paste in plastic food bags and flatten to about 1/4 " inch. Seal and freeze flat in freezer.

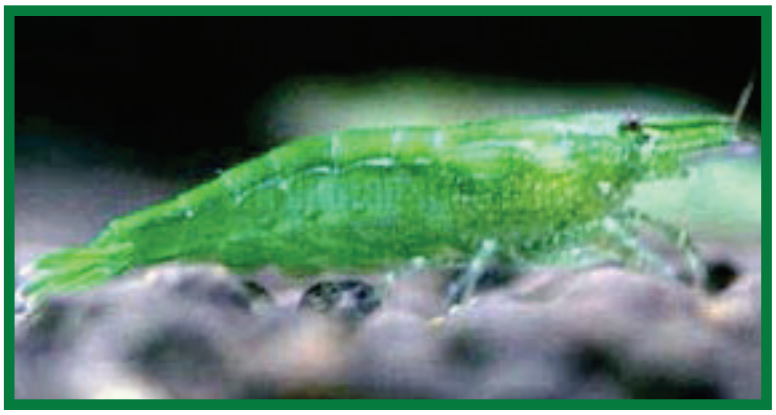
FEEDING:

To feed, break off small pieces and drop directly into tank. Care should be exercised when feeding this food, as an over abundance has a tendency to cloud the water. It is also not recommended that this food be fed in tanks with gravel on the bottom because the food will settle below the gravel and contaminate the tank unless you have energetic catfish in the tank to clean it up.

Ryan Curtis – BAS

TheShrimpFarm.com is the place to go for freshwater shrimp. The new owner is **Ryan Curtis**, with a new mailing address: **The Shrimp Farm USA, 2401 East Washington St, STE 200 A2, Bloomimgton, Il 61704** and has set up an Aquarium Shrimp Forum **http://theshrimpfarm.com/forum/index.php**. You can go to this forum and ask questions, talk to other shrimp nuts and discuss anything and everything related to Freshwater Aquarium Shrimp.

Green Shrimp



The Green Dwarf Shrimp is easily identified by its beautiful bright green color and slender body, with almost all the females of this species having a white stripe down their backs.

Unless stressed out or sick, the shrimp will maintain its color all the time. Since it comes from tropical regions, the water temperature should not drop below the recommended range for extended period of time and preferably soft neutral to medium hard alkaline in the long run.

The Green Dwarf feeds mainly on algae and fish food and does not have planktonic larval stage. In fact, after hatching, the young it is a miniature version of the adult and assumes a benthic lifestyle; it is extremely small and grows very slowly, unlikely to swim freely around but rather confining to the bottom of the tank. Hence, it is important to provide the shrimp ample hiding place.

Ryan

Scientific Name: *Neocaridina davidi*	Temperature Range: 75 - 83˚ F
Other Scientific Names:	Hardness Range: 8 - 20 dkh
Neocaridina denticulata sinensis	Life Span: 1 - 2 years
Common Name: Green Shrimp	Gestation Period: 30 days
Other Common Names: Green Jade	Ideal pH: 7.2
Origin: India, Malaysia	Ideal Temperature: 78˚F
Found in the wild: No	Ideal Hardness: 12 dkh
PH Range: 6.8 - 7.5	Diet: Omnivore

Izzy Zwerin ~ BAS

The Practical Plant

PROPAGATING *Cryptocoryne balansea*

Cryptocoryne balansea is a great plant. It would look real nice as an addition for taller aquariums as the plant reaches over 18" tall. This plant is extremely hardy and tolerant of a wide range of water and lighting parameters, as are most Crypts. It is, in typical Crypt fashion, slow to get established. Once it gets going it grows well. It will spread via runners and given a little time become quite prolific. The leaves are long strap like blades with a nice texture on the surface. The leaves are a deep green with a reddish color starting at the base and running all the way up the middle of the leaf.

Cryptocoryne balansea is native to Thailand and Vietnam. Like most Crypts this plant is a heavy root feeder and will benefit greatly from the use of substrate fertilizers. My *C. balansea* is being kept in a 20-gallon long so that the leaves start in the back of the tank and arch over to the bottom in the front. I like the the effect, and plant smaller Anubias species in its shade. I am using Caribe Sea's "eco-Complete" as the substrate. I have a Whisper 30 hang on power filter. The aquarium is heated to 78°, the GH is about 60 and the pH is 6.8. Since the aquarium is only 12" tall I chose a fixture made by Coralife called the "Aqualight T-5 double." I would describe the lighting on this aquarium as the "upper" end of moderate. The system is CO_2 enriched as well. Since the bio-load in this system is fairly heavy, and many of the other plants in this tank are slow growing species as well, I only supplement this aquarium with potassium and trace elements. To propagate *C. balansea* just separate a plantlet from its runner and replant.

One of the nice things about this plant is that it does not seem to suffer from "Crypt Rot." Crypt rot is a condition where all the leaves rapidly disintegrate. There is considerable debate in plant circles as to the cause of this. I personally believe that this is just how the plant adapts to a new environment. I keep a variety of Crypts and the ones that displayed this phenomenon were not killed by it and eventually re-grew, however some species took as long as six months to regenerate.

Izzy

Sy Angelicus – BAS

CATFISH CONNECTIONS

The Flagtail Porthole Cat

Dianema urostriatum

**Every family has someone who is just "different"!
You know what I mean?
My uncle the Flagtail Porthole is definitely like that.
Native to the Rio Negro in Brazil,
he grows to about 4 ½" inches.**

He's a showy guy. brown nape, tan sides, white belly covered with dark brown spots. But what really sets his clothes apart is his longitudinally striped black and white tail and his neon green gill covers.

He's very peaceful, he gets along well with everyone especially his own kind. Always keep him in a group of at least three, six would be better.

Usually available at a reasonable price a small school shouldn't hurt your pocketbook too much.

My uncle is very active! He's a health nut! Swimming constantly in mid-water he tries to act like a glass catfish. He schools well with his friends. When he;s not swimming he's rooting in the bottom looking for food.

Occasionally he'll "perch" in the plants surveying his realm. he sleeps all night and is awake and out in the open all day.

A 20-gallon long will hold three but six in a 55-gallon is much better.

Being a health nut, uncle likes good water quality, change 25% of his water twice a week.

Flagtails pectoral and dorsal initial spines are very hard and sharp, although they do not snag in the net often when they do they are terrible to get out, and usually in the process of cutting them out you will get stuck too. A very unpleasant situation. So for their safety and yours use a plastic or glass container whenever you move them, better safe than sorry.

Good filtration is important too, use a high quality power filter. He likes a moderate, but not too strong a current.

His active nature does extend to high jumping, right out of his tank! So always cover him!

He loves roots, caves, hiding places and plants in his tank. Floating plants are good for him too. He feels more secure with them overhead. Don't worry his rooting in the bottom will not dig up plants.

Uncle does best in slightly acidic and soft to medium hard water, but will tolerate most types of water.

If you want to put some peat moss in your filter to tint your water tea color he'll really like that. Keep him at a temperature of between 72˚F to 80˚F so he doesn't get ick and he'll be happy and live a long time for you.

Flagtails have small mouths so even though they'll eat everything you offer, make sure it's a suitable size. Micro pellets and daphnia seem to be especially relished. Uncle will male a mad dash to the surface for a breath of fresh air at times just like corys do so don't be surprised when this happens.

He has a habit of rolling his eyes like corys do too! I think the corys have been teaching him tricks.

It's not enough uncle schools, swims around in the daytime and has a flashy tail, he one ups everyone by breeding in a bubblenest. What kind of proper catfish does that? I told you he was different.

At least he is a good father watching over the eggs until they hatch.

Uncle does not breed especially easy or often in the aquarium, perhaps you can convince him to do so?

Flagtails pectoral and dorsal initial spines are very hard and sharp, although they do not snag in the net often when they do they are terrible to get out, and usually in the process of cutting them out you will get stuck too. A very unpleasant situation. So for their safety and yours use a plastic or glass container whenever you move them, better safe than sorry.

One last trick that my uncle does that is really cool is to "tread water". He shakes his dorsal, pectoral and anal fins to do this. he can do this for a very extended periods of time. What a showoff. You'd think he thought he was a hummingbird. Ugh!

Like I said, flagtails are different! But different is good...bring home some flagtails today and enjoy!

Synodontis dreams.

Sy

Kathy Deutsch - MAS

Darter November/December 2016 Vo. 42 - No. 6

Small Selfcontained Tank Systems... Great gift or Pain in the Rear?

The holidays are approaching and those tiny self-contained tanks in their shiny boxes look pretty good.

You might be thinking of one for a new hobbyist, or someone may be eyeing them for you.

I have 3 of these tiny marvels currently running. Or sometimes I want to say I have 3 of these little pains going right now. These systems have a lot going on, both good and bad. No brand names will be mentioned.

Fish need clean water, food, shelter or a place of safety, the correct temperature, some decent lighting (like sunlight), and the ability to rest in the dark. I am not convinced these little tanks can do that for some types of fish.

The systems I am talking about are about 1½-gallons, with a filter built in and an LED light over the top. My betta lives in one, and has for years with 2 *Corydoras similis*. I also have a spider plant in the top, with roots reaching into the water. The betta likes the cover; the plant likes the nutrients. The plant roots serve another purpose. They catch and hold bits of food that would otherwise fly around the tank and get sucked into the filter so that the betta gets a chance at eating them.

That is my main complaint with these little tank systems. The filter is overpowering and cannot be dialed back. The food rushes by and disappears into the filter. The current is so crazy that some fish cannot swim against it. To fix this, the outflow from the filter in my betta's tank is angled off to the right so it hits the wall, deflecting some of the current and I use both a plant on top of the tank and a substrate planted *Cabomba* to act as a slow-down, so the betta food is stopped before it can swirl away. I also have structure in the tank to break the flow, and so the cories can sit in a quiet spot. The betta hangs out in a dark corner by the cories at night. Another tank I recently set up does not allow any diversion of the flow. I

tried guppies and platys (one at a time) in that tank and they suffered. Within a day I took them out. The current was just too strong and they got tired. I tried female bettas in the same tank had damaged fins within an hour. These betta girls are now happy and healthy in...a plain glass bowl with *Cabomba* on top. No filter, no light. I use a piece of plastic to partially cover the top so they don't jump. The self-contained tank is running with some plants, but I won't risk another fish.

The filters of these tanks are straight forward and easy to clean. They do a great job. Once a month I rinse the filter pad, the charcoal, and put them back in. I scoop out a cup or two of water every week (and water the plants with it), add new water, and the "work" is done. When I want to clean the gravel, I just clean the filter, stir the gravel with my hand, let dirt get caught in the filter, then reclean the filter.

These tanks sometimes have inadequate covers, or no covers at all. It is not fancy, but plastic needlework canvas with a hole cut for the LED to shine through works, or a small piece of acrylic/styrene from the hardware store.

As for the lighting, I must say the LEDs are nice. They grow plants. The fish like them. Nothing beats indirect sunlight, but the LEDs are a great supplement.

Some companies make small one temp heaters for these little tanks. I have not tried any. But the tanks are so small they lose and gain heat rapidly. My tanks are in my kitchen, which is always fairly warm.

If you want a tiny tank and plants are your foremost interest, I think it would work well. Position the tank where it can get some indirect sunlight, BUT away from heating/cooling vents. If you want to add fish, I would first add some rockwork the fish can hide in and to see if it will slow down the water movement without creating dead spots. Then I would try 2 dwarf corydoras, watching for stress. Maybe tetras or small livebearers? If the water flow is slow enough and the tank is warm enough (73˚-75˚ degrees F) a male betta may work out.
(See Ed's note.)

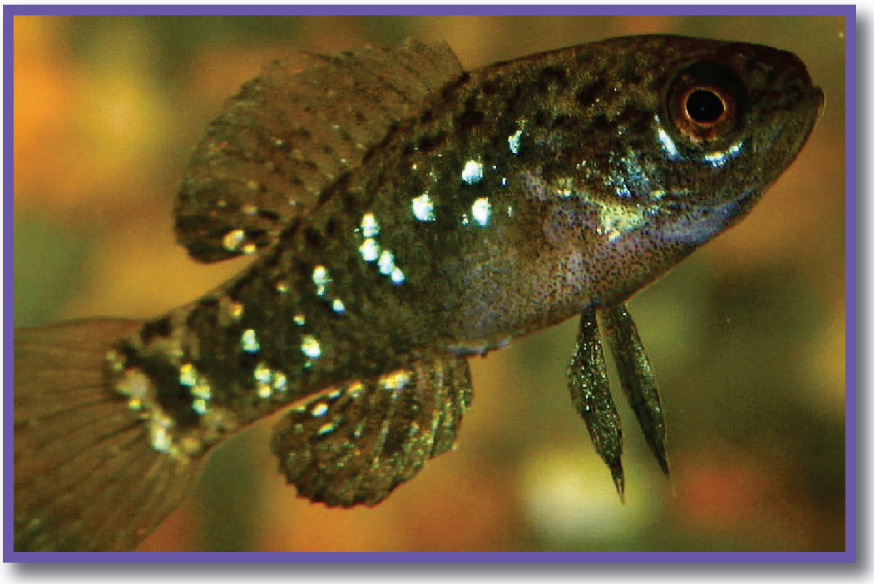
The tiny tank revolution has taken over the store shelves in the big box near my house. They do make a great gift for someone willing to fiddle with them a little. If you do want to give one, offer your guidance as well - the greater gift! Keeping one of these going takes time, patience and a LOT of observation. Things go wrong so fast in 1-gallon of water. Be prepared to set up an emergency bowl or tank if the fish don't work out in the tiny tank.

Ed Note: Nano tanks were very much in evidence at Aquatic Experience this year and are used frequently for shrimp. Dennerle now has a whole book on plants, shrimp and fish for such. I use them for several species of livebearers, ie: *Cnesteron deccamaculata, Heterandria formosa, Neotoca bilineata, Poeciliopsis prolifica, Phallicthys quadripunctatus,* etc. All less than 1 ½" and smaller than guppies. *Otocinclus* are my *Loricarid* of preference but young bristlenoses work for up to a year. I also use *Cory habrosus, Cory pygmaeus.* There are lots of little tetras and barbs but few Cichlids small enough, however.

BAP Report by **Dick VanHyfte** - EIAA
Reprinted from *Fin Flap* January 2017

Spawning *Elassoma evergladei*

Everglades Pygmy Sunfish (Fargo, Georgia strain)



These fish were obtained through **Lee VanHyfte** in early 2016. The pair was placed into a 10-gallon aquarium containing a fair amount of plants for hiding and to maintain water quality. The bottom was bare except for some dying plant debris, and the aquarium was equipped with a small sponge filter. The temperature varied from 70˚ to 73˚F. The water level was kept low at around 3 to 4 inches and a light was placed overhead. The water had a total conductivity of 150 ppm and some tannins were in the water from some oak leaf and catappa leaf extractions.

As the pair matured, the male's color improved dramatically until the entire fish appeared black with several blue spots, and arcs around the eyes. He would, on occasion, lose some of the color in his body, but, the majority of the time, he kept the dark colors, which were quite striking. The female showed only light mottling in her body and the fins were translucent.

I fed them mostly BBS, but also included some other fare such as grindal worms, microworms and some *Ceriodaphnia*. Water changes were infrequent, and usually made if I noticed an increase in conductivity from feeding BBS. I would occasionally siphon detritus from the bottom but the fish actually seemed to be more comfortable with some dead plant matter present.

Around the 1st of September, I noticed several small fry gathered in one corner. They had grown to nearly ¼" long by that time. I had spawned *Elassoma zonatum* previously, and knew that newly hatched fry would be much smaller. I also noticed that a large number of hydra were present in the aquarium. I worried about the future of the spawn and decided to dip out what I could catch. I only managed to come up with 3 fry, and could not see any others. I treated the aquarium with Fenbendazole which has shown to be effective in elimination of Hydra but is

relatively safe with most aquatic animals. A single treatment did eliminate the hydra, so I hoped for another spawn.

At the end of September, 2016, there was a danger of a near record flood from the nearby Cedar River. We decided, with help from my kids and grandchildren, to move everything from our basement. This included the fish room. With a great deal of effort, we accomplished this seemingly insurmountable task. We did not get the flood in our home, and, over a course of a couple weeks, most of our belongings, including the fish, were returned to the basement. At that time, I noticed that a few juvenile *E. evergladei* were present in the aquarium that were obviously siblings to those I had removed previously. I decided to net them out in case they would interfere with any future spawnings. Much to my delight, I removed an additional 8 *E. evergladei* of that size, as well as about 10 smaller juveniles that had to be from a later spawn.


Hydra

Newly hatched fry of both the *E. zonatum* and *E. evergladei* are much too small to eat baby brine shrimp, however, with a great number of fine-leaved plants and mosses available in the spawning aquarium, I am sure that the *E. evergladei* could find an abundance of suitably sized food organisms to get many of them through the first couple of weeks (yes, they are miniscule). Once they got through that phase, I used BBS at least once a day in the aquarium, which was, in this case, the same aquarium as the parents.

I understand, from research, that normal spawning occurs around March, but these fish likely spawned much later than that. I would really guess that the first spawning occurred around the middle of August and the later spawn around mid-September. Unlike my previous spawn of *Elassoma zonatum* (a strain from Missouri), a drastic cooling down period did not appear to be necessary.

Comparing the 2 species, I found that the evergladei had a much better disposition than the *E. zonatum*. The *E. zonatum* male killed all the other non-participating conspecifics in the aquarium, leaving only the mating female. The *E. evergladei* were tolerant of the fry and juveniles in the same aquarium, even spawning when 8 rather large juveniles were present. I feel that the *E. evergladei* is a better aquarium fish due to this behavior and reports even indicate that they may get along in some limited community aquaria. The color, size and shape of this fish is very similar to the common annual Killifish, *Austrolebias nigripinnis*, the Blackfin Pearlfish. I would recommend this beautiful fish to anyone that would take the time to give this species a proper aquarium and live food.


E. zonatum


E. evergladei

Anthony P. Kroeger – BAS

YAHOO UARU

Uaru amphiacanthoides

UARU ARE A UNIQUE CICHLID. PRONOUNCED ***WAARUU***. THIS CICHLID HAILS FROM GUYANA AND THE AMAZON BASIN. IT GROWS TO ABOUT 10" INCHES IN LENGTH.

Coloration changes drastically over its lifetime and varies with size. Juveniles up to about 2" are black with white polka dots - similar to *T. duboisi.* From there medium size fish are yellow/brown with brown stripes, marbling and spots. Adults are colden orange with an irregular huge black swath triangle below the lateral line extending forward from the tail for about 2/3 rds of the body. hence the other name for Uaru: the triangle cichlid. Fins in adults are bluish/green tinted. The nape and back vary from blue to brown to grey. The eyes are bright red in healthy fish.

Uarus are rounded fish high profile fish like Discus, They are sensitive like them also.

This is a peaceful fish but because of its sensitivity and special requirements it is best kept and treated like Discus. Prices for Uaru are always high. Most Uaru sold are wild caught and usually are in poor shape. Select your fish carefully. Always ask to see the Uaru eat before you buy them and buy only those Uaru that are feeding.

This large cichlid needs room, quiet, good food and excellent water quality. Set it up like a Discus.

A 55-gallon tank is fine for about 6 juveniles, expect to move them to a 120-gallon tank eventually!

Plant the tank well; use rooted plants and flowerpots for hiding places. Use a power filter. Water must be warm; 80˚ to 84˚F, soft and acidic to neutral. Change 20% of the water twice a week. Never do larger volume water changes on Uaru! Keep their water conditions as stable as possible. This fish has zero tolerance for ammonia and nitrite. It dies fast in poor quality water and unhappy Uaru will let you know. Its eye ring turns red to black first, then the fish turns black and stops eating. Uaru are very sensitive to water quality.

Food must be high quality frozen and flake and pellets. They love frozen bloodworms.

Uaru also need veggies regularly. They love boiled zucchini, kale, beans, squash, peas and spieulina. Give them veggies every day.

Uaru are hidden substrate spawners. A flower pot on its side is used for this purpose, Spawning occurs at 86˚F. They like it warm! Yaru are difficult to spawn, They spawn in a manner similar to *Severums.* pairs are very nervous and sensitive to any vibrations. Slamming a door or stamping across a room will cause them to eat their eggs and fry.

Fry hatch after several days and are guarded by both adults. Fry initially take live baby brine shrimp. The fry, in some instances, will also feed off the adults mucus slime coat. Just like Discus fry, but usually not as intensely or as long. Fry are very sensitive to water quality. Not a easy fish to find, keep or breed, Uaru present a challenge well worth taking for moderately skilled aquarists. If you think you're up to the challenge try some.

Happy fishkeeping.

Tony

Fish Disease Tips:

HELP!
MY FISH IS SICK?
WHAT SHOULD I LOOK FOR?

**An ounce of prevention is worth a pound of cure!
This old adage is certainly true regarding aquarium fish.
But really what do you look for to know if your fish is sick?
What can you do to prevent and treat disease?
Many of us learn the hard way when all of our fish start dying.**

I know I certainly larned this way. I wiped out my entire first community tank except for a green aeneus cory and a blue gourami by dumping an unquarantined head and tail light tetra into it. This was when I was 6 years old. Only later on did I learn what ick was, too late then.

In this 5 part series, I'll explore and answer questions such as "How can I tell if my fish is sick?" "What do medications do and how do I use them?" "What can I do to prevent diseases?" and similar questions.

In this first part I'll discuss what to look for to determine if a fish is sick or not.

Follow these suggestions when you buy new fish, but also when observing your fish in your home aquarium and you will have less disease problems.

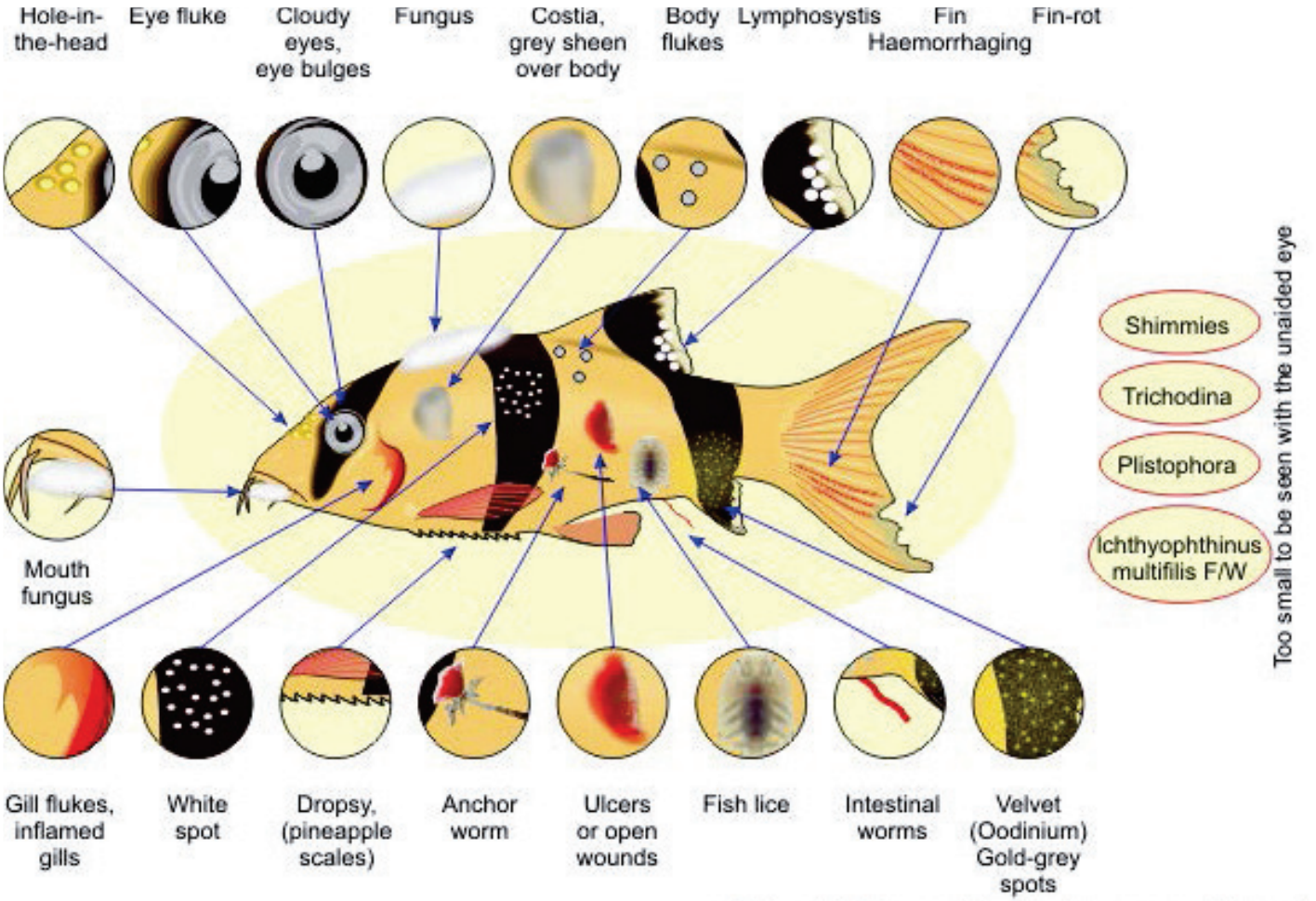
In nature fish (like all animals) are adapted to move with a minimum of effort through their environment with out attracting a lot of attention and predators.

So lets look at a healthy fishes characteristics; a healthy fish will swim (with a few exceptions) in a clean, normal manner. Jerks, twitches,and shimmies are not normal manner. Its movements will be smooth, flowing and uninterrupted.

Eyes will be clear, not red, bulging or swollen, fins will be extended and open. Clamped fins means disease. A healthy fish will not have random bumps, open wounds, sores or any sort of cloudy or discoloration anywhere on its body. Neither will anything noticeable be hanging off it. Again there are a few exceptions to these parameters, but these exceptions are few.

A healthy fish will open and close its mouth and gills to breath in a constant slow motion. Rapid breathing indicates disease. A fish that behaves or acts different is always ill.

Watch your fish eat. A fish in a store that does not eat surely has a problem, same as ones in your home that do not eat. A fish that eats but spits all its food out is likely to be on its way to being ill, if it is not already ill.



spits all its food out is likely to be on its way to being ill, if it is not already ill.

Just like you, an inability on the part of your fish to eat indicates a problem.

Normal fish do not itch or scratch except very rarely. This motion is called "flashing". It is generally indicative of a skin related disease. The fish scratching is trying to remove parasite or bacteria.

Normal healthy fish never have any sort of fuzzy growth or cottony type puffs anywhere on its fins. Much less on its body. The scales of most fish are usually smooth and interlock fairly well. Scales do not stand out on end to give a rough appearance...ever!

Nor should any scales be missing. Missing scales at best open a pathways into the fish for various diseases and at worst mean an opportunistic disease is already underway.

Look at the fish head on, between the eyes, at what is essentially its forehead. This area should never appear pinched or thin. It should be broad and full. Look too at a fishes' belly, it should never be pinched or worse sunken in. Both of these areas, if thin, pinched or sunken, indicates a starving fish and certainly one that is very prone to disease, if it is not already ill.

A healthy fish will not have raised white or yellow spots anywhere on it. Look closely at the fishes fin edges too! They should not appear to be deteriorating and have a ragged white edge. Your fish will tell you if its sick. All you have to do is look closely!

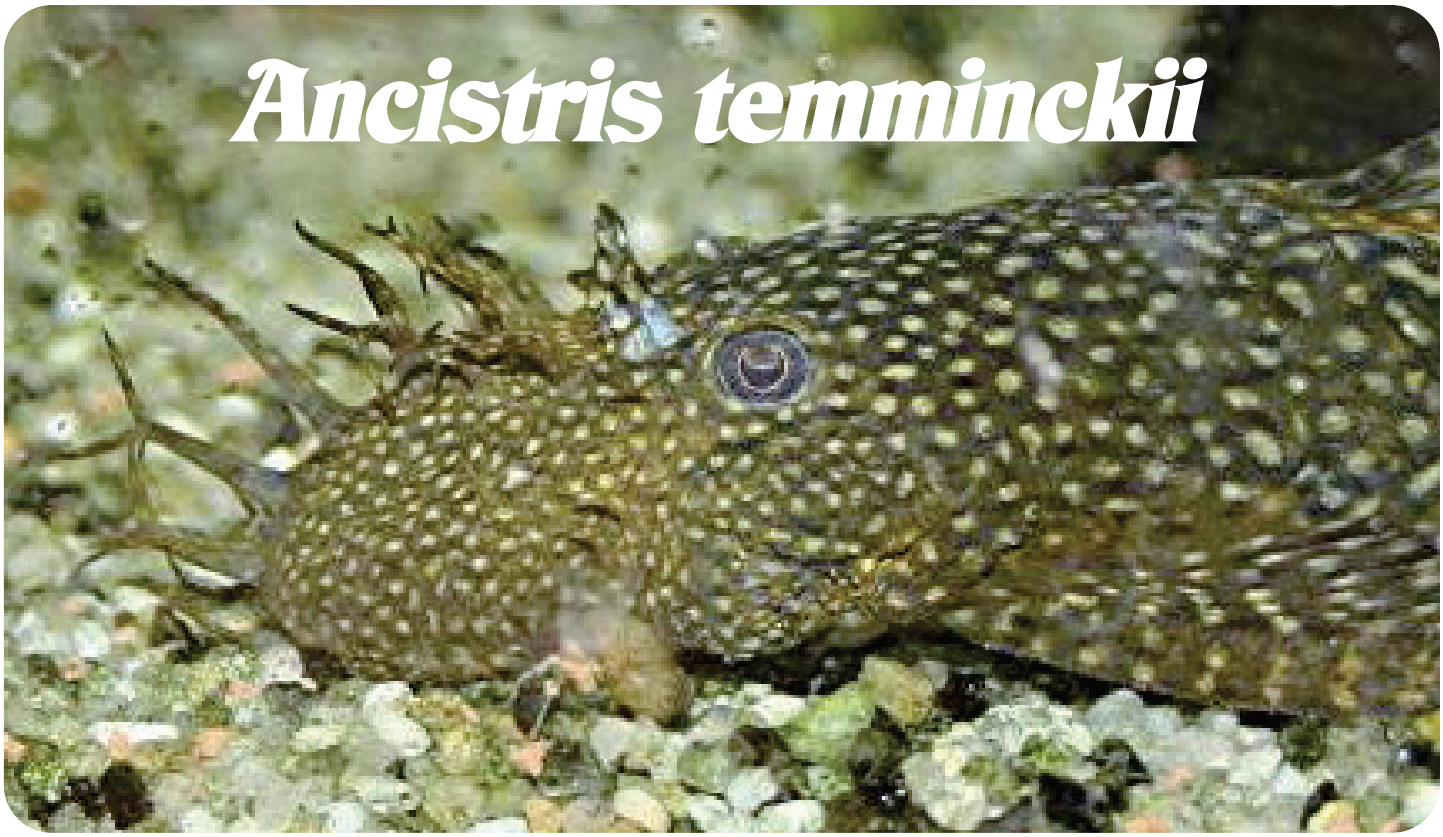
Follow these tips and you'll have fish with less disease.

Tony

Joe Reich - GAAS

The Mar/Apr 2014 issue of *Tank Topics*, Newsletter of the Greater Akron Aquarium Society

Ancistris temminckii



I know, I know, Bristlenose catfish are supposed to be easy to breed! I've been told this a number of times over the years, but *Ancistris temminckiit* for some reason or another, mine never spawned success-fully for me... until recently. So most of you hobbyists will probably be bored with this article, but our editor has requested some reading material, and this is about the only thing I have to write about at this time. So here it goes...

I've been keeping this species for about the last 6 years or so. I've had them spawn for me in the past, but it was always in the uplift tube of my sponge filter. Needless to say, the eggs never got fertilized due to the up current of water inside the tube and they would always fungus. Then last summer after a fish auction, I ended up having to move fish to various tanks to make room for my new acqui-sitions. As it happened I ended up putting an older (one of the first ones that I bought), much bigger female into a tank with a younger and much smaller male. At first it didn't look like it was going to work out because the female would chase the male away from anywhere that she wanted to go. Inside the tank was a cave made for *Altolamprologus* species, I had a species of cichlid spawn in it earlier in the year. I noticed that the male Bristlenose was hanging out close to the cave and I assumed he was just staying close to get away from the female. After all, it didn't look like she would be able to fit inside. One day the male was "flapping" his ventral fins from the in-side of the cave, I had no idea what this was about, but I assumed it was an indication of bad water quality because of feeding the cichlid fry in the tank finely powdered flake food. So I immediately did a partial water change. The next few days the male stayed inside his cave, only poking out once in a while at feeding time. I didn't think anything of this behavior other than

he was hiding from the female. Was I ever wrong! One day during feeding time I noticed a tiny pleco near the surface of the tank. I was totally taken away by the sight of all those tiny pleco's outside the cave, on the tank walls and airline tubing! One BAP coming up! The cichlids didn't even try to eat them! I fished all the fry out and into a 10-gallon for raising, after waiting this long for an "easy" BAP I didn't want to take any chances on losing them.

I have this species in a number of my tanks, and it wasn't long after the first spawn in the 29-gallon, that the male in my 180-gallon started flapping his ventrals also. The 180-tank has one male and two females. Since this tank is located in my kitchen, I pass by it often and get to watch a lot of the aquatic entertainment that this community tank provides. This time the cave the male was flapping next to had the opening facing the front of the tank. I was able to watch the de-velopement of the eggs and fry by shining a flashlight inside. I didn't do it too often though, it looked like the male was taking offense to the bright light. I get the impression that this species is somewhat territorial. They seemed to have their "areas" where they would prefer to hang out. Whenever one ventured into the close proximity of another it was chased away. One day while I was passing by I noticed a female approaching the cave and I had already seen the male go inside. I have occasionally seen a female go into it before, so this was nothing new. I thought I would watch to see what would happen. She then entered the cave and the male came out. I thought maybe she chased him out, but he went back inside and they stayed in the cave together. I got out the flashlight and peaked inside thinking that maybe they were fighting and I just wasn't seeing it, but all was tranquil. After about a half hour, I shined the flashlight inside again, and low and behold, there were eggs attached to the roof of the cave. Cool!

What happened next also surprised me. The second female approached the cave and went inside. Again I expected some fighting and a quick eviction, but none came. I can't say for absolute certainty that both females spawned because I had to leave for work. But when I got home there were eggs laid in two separate spots with one clutch bigger than the other. So it's possible these fish may be harem spawners. Every day I would shine my flashlight into the cave and watch the develop-ment. The eggs were pretty large, bigger than some of the mouth brooding cichlids that have spawned for me. They were light amber colored and seemed to get just slightly darker as they developed. From spawning day to hatching day, it took five days. After they hatched, they remained attached to the top of the cave where they were laid and they looked like little eggs with a tiny, tiny tail wiggling back and forth. They stayed in this stage for another five days, but each day the yolk sac would get smaller and the tail would get bigger. Their color stayed a light amber color. At day four I noticed that they were starting to move around inside the cave and it looked like they were attaching themselves with their suckermouths. Once they looked like miniature adults bodily, they took on the adults coloration too. The male continued to guard any fry that remained in the cave, he seemed to even herd them away from the opening. It wasn't until about the fourth day that I noticed that the fry were becoming less and less in numbers. I resolved that when I got home from work that I would fish out the rest. Unfortunately, all I got was six fry from that batch. Oh well, lesson learned! I put that lesson to good use when they spawned again two weeks later. There were less eggs in that spawn, but I sure got more fry than I need!

There is one pleco food that I've been feeding them on a supplemental basis. They seem to go after it with much gusto. It's made by Sera and called Catfish Chips. I'm not one to jump on the popularity/fad bandwagon, but I'll try new products, and my Ancistris are telling me that this food is delicious! I also occasionally give them french cut green beans, straight from the can. As well as canned spinach. Any left over food that makes it to the bottom of the tank is cleaned up by the pleco's too, no surprise there. All in all, an easy fish to keep, and now at least I can say that I turned in that BAP too.

Anthony Kroeger - BAS

• IMPORTING KILLIES •
WILD VS CAPTIVE RAISED

**In the general hobby, killies have a reputation for being finicky and hard to keep.
For most killies this is a dramatic misconception.**

I have imported/exported and bred aquarium fish for decades now. It is my career having been commercially involved in ornamental fish for 43+ years now. Having imported killies for years I can say most are durable and hardy fish.

In this article I will compare two standard importations: one wild, one captive bred to give you an idea how killies travel and arrive when imported.

I import *Aphyosemion striatum* from Eastern EU countries. All usually are tank raised. I import this fish with many species of *Nortobranchius* and other *Aphyosemions*. They usually are sold in pairs, but that is not what I usually receive. Normally they arrive 60% to 65% males, and 35% to 40% females. Size at arrival for "medium" pairs is usually about an inch.

Most captive bred EU killies I receive are packed 150 to a bag. Four bags to a styro insulated box which weighs about 60 lbs. Killies ship amazingly well from the EU. It takes about 18 hours to complete the trip and clear fish and wildlife customs. Losses are usually under 1%.

Because of the heavy pack the fish usually are medicated with methylene blue and water quality upon is rather poor.

It's a good thing that killies tolerate low pH. Upon arrival pH is frequently 5.0 to 5.5. Needless to say ammonia and nitrite is high too. So much for being sensitive fish.

Newly arrived killies are very nervous and jump constantly. They're also light sensitive. I open the boxes in dim light. If the light is bright you will have hundreds of killies jumping up inside the bag. For very sensitive fish like *Pterolebias* species I use red cellophane taped over a flashlight so as not to send them into shock due to sudden light.

All through opening the bags and acclimation, newly imported killies must be tightly covered. Tape up any cracks or crevices. It's amazing the small spaces these fish can successfully launch themselves through.

I keep my killies as dim/dark as possible during arrival/acclimation. Just enough light so I can see to work with them. I do not feed newly arrived captive bred killies until 24 hours post-arrival. I then offer frozen and flake foods.

Most of my wild killies are imported from Africa. I have to do all of the previous and then some. Take *Epiplatys sexfasciatus* from Nigeria for instance. In Africa, killies are sold by the piece, not the pair. Sex ratios can sometimes be very lopsided, 90% one sex and the wild killies are never a consistant size. You get juveniles and adults in the same bag. Pack is just as heavy, but the travel time is much longer. Sometimes up to 40 hours due to transfers in Europe to come to the U.S., so water quality is much worse.

To bring up the pH I add prepared water and use fairy heavy aeration, wild killies are always opened and acclimated in pitch dark. The lighting consists of flashlights shrouded in red cellophane. Coming from dense jungle canopied streams, as many African species do, they can be very light sensitive upon arrival. Opening a box in normal room light will result in a least 50% mortality within 15 minutes, due to shock from their photosensitivity to bright light without sufficient time to adjust. Likewise initial feeding is different too. Wild killies have traveled and starved longer, so I feed newly arrived wild killies live blackworms once their pH reaches 6.0. many times the killies will not eat right aways but I offer them blackworms anyway, because the blackworms remain alive to temp them. They usually start eating within 24 hours.

Bear these this in mind whenever you receive shipped killies.

Tony

From our historial files, a reprint from *The Aquarium Bulletin* of September, 1917

H. A. Van Cott - BAS

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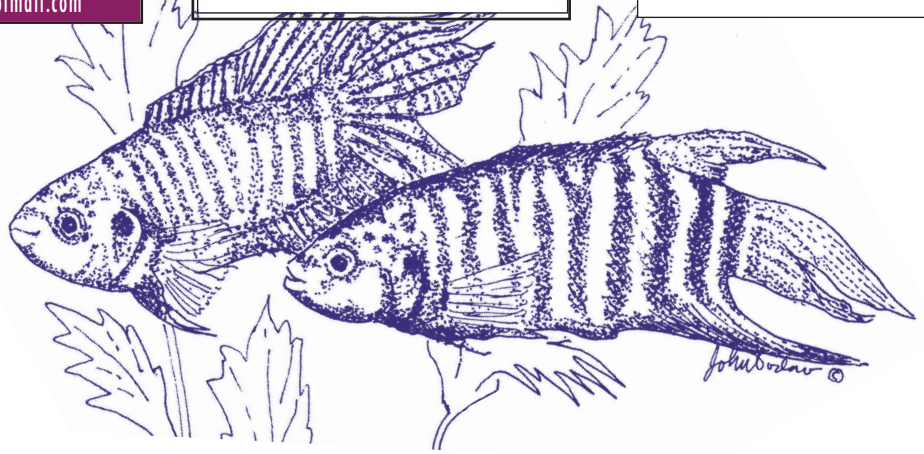

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