

FOTAS



Federation of Texas Aquarium Societies

Fish Tales

Volume 10 Issue 3

July - September 2020

Adventures in Pond Keeping Part 1

Let's talk about salt!

Triangle Cichlid

Thoracochromis brauschi

***Pundamilia* sp. "Redhead"**

Tips for keeping Planted Tanks

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**Arboretum Pond at Woodward
Park, Tulsa OK.
Photo by Gerald Griffin**

Design and Layout
Gerald Griffin

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Fish Tales Submission Guidelines

Articles and Art Submissions:

Please submit all articles, photos and art in electronic form. We can accept most popular software formats and fonts. Email to herpchat@yahoo.com. Photos and graphics are encouraged with your articles! Please remember to include the photo/graphic credits. Graphics and photo files may be submitted in any format, however uncompressed TIFF, JPEG or vector format is preferred, at the highest resolution/file size possible. If you need help with graphics files or your file is too large to email, please contact me for alternative submission info.

Next deadline.....
November 30th 2020

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President's Message



Clay Trachtman
FOTAS President

Hello all,

Thank you for taking time out of your busy day to read FOTAS Fish Tales. It means a lot to the authors and the editor as we strive to make this the best fish club publication around. As you are well aware, we were unable to have the annual Federation of Texas Aquarium Societies (FOTAS) Convention in Austin, TX this year; however we still had to take care of the business that normally takes place at the FOTAS Convention. A virtual Zoom meeting took place on August 22 at 7:00 PM where clubs were updated on items such as the FOTAS budget, future budget plans and the election of officers.

Budgetarily, we are actively trying to become more financially secure. The first step in doing this was to move the website to a new hosting company. That move saved us \$60 / year. That may not sound like a lot, but FOTAS only has about \$20,000 to its name, so every little bit helps. In another move that will help the finances of FOTAS, we will move some of the funds around so that we can get higher interest rates on the money that we have. Unfortunately, one thing that we will have to spend money on is the reapplication for FOTAS to become a 501 c 3 non-profit. FOTAS had this status in the past, but it was lost over time due to inactivity.

For the election of officers, we now have a good mix of old blood and new blood. First, I was reelected as President and Chris Lewis was reelected as Treasurer. But then we have a few new people. Jose Hernandez, President of the Texas Cichlid Association (TCA) was elected as Vice President. Jose brings with him a wealth of enthusiasm. Just from what I have seen with him in terms of assisting with the setup of the fish room at the American Cichlid Association in Houston, being the first person to sign up as a vendor at FOTAS 2019 in Baton Rouge, and the planning that he has done for FOTAS 2021, I can tell he is going to do a great job as Vice President of FOTAS. Jose takes the place of long time Vice President Kyle Osterholt. I want to publically thank Kyle for his long time service to FOTAS.

Next I want to introduce Kristen Bellatti as the new Secretary of FOTAS. Kristen has been extremely helpful doing the thankless tasks with the Southeast Louisiana Aquarium Society (SELAS) such as being a moderator on the Facebook page as well as helping out with the auctions. Kristen is a talented graphic artist and has already made a new logo for FOTAS that can be seen on the website. Kristen replaces long time Secretary Lisa Hufstetler who resigned in 2018. I also want to publically thank Lisa for her long time service to FOTAS.

Once again, thanks for your time and happy fish keeping!

William "Clay" Trachtman

Let's talk about salt!

**Article by
Alex Brown**

As is typical for me, I don't like to write without inspiration. Well tomorrow is Thanksgiving and dammit, I won't eat turkey without SALT (my heart can take it... I think). So, I decided this episode of Brain Ferts will be about dosing dry salt fertilizers. Specifically, with the Estimative Index (EI) dosing method.

Before I get into specifics, I want to address a question I recently read – “Is salt good or bad for an aquarium/fish?” Like many questions in our hobby, this one is loaded with tons of sub-questions and nuances that the original questioner probably didn't even realize. They may have been asking about Epsom salt (Magnesium Sulfate) for treating ailments. Or they could have been asking about table salt (Sodium Chloride). And in those cases, while both are potentially helpful for fish, Sodium Chloride is bad news for plants. But most hobbyists don't realize that “salt” can actually mean a LOT of different substances. Technically a salt is “Any of a class of compounds formed by the replacement of one or more hydrogen atoms of an acid with elements or groups, which are composed of anions and cations...” BLAH BLAH BLAH! You get the point. A lot of stuff falls under the category of “salts”. That's where the “good” salts come in, for plants.

The next question I see a lot is “Why would I bother with measuring and dosing these dry fertilizers when I can just squeeze some liquid ferts out of a bottle?” The best answer I can give to this is – COST. Did you know that most liquid fertilizers (and other chemicals you use) are typically 90-96% water? WATER! So...

you're paying a LOT for a bottle filled with 95% water, to put it in your water. <scratches head> Don't get me wrong. Convenience is great. I mean, it's the American Way, right? Why spend effort doing something, when throwing a little cash at the issue can buy a more convenient way? There is one particular “all-in-one” liquid fertilizer that I DO use on smaller tanks to help my plants thrive. But at two squirts a day for every ten gallons, it doesn't last very long on larger tanks and the cost adds up quick! Enter the realm of dry salts. \$20 worth of dry salts fertilizers will last half a year or more on a 75 gallon low-tech tank. In my not so humble opinion, any tank over 30 gallons should be using dry salts fertilizers, unless you have MTS (multiple tank syndrome), in which case that drops down to 10 gallons. And here's the best part: if you want to, you can premix your dry salts into a solution of your own (yes, with water) to make dosing the dry salts as easy as dosing the expensive all-in-ones.

Alex... dude... shut up and talk about EI Dosing already. OK OK OK sorry.

So, now that we've established that using dry salts is the most economical, how hard are they to use properly? There are two commonly used methods for dosing fertilizers. There is the Perpetual Preservation System (PPS Pro) and the Estimative Index (EI). The PPS Pro system is the more material efficient and scientific way, using constant testing, to give your plants the proper nutrients they NEED.

But frankly, who has time for that? I sure don't! I

encourage you to look up the PPS Pro system and garner some knowledge from it. But this article “ain’t big enough for the both of us”. So, I’m only talking EI dosing today. EI dosing is essentially overloading your tank with more fertilizing than your plants can actually use. Then doing a large water change at the end of the week to reset the tank and keep the excess ferts from adding up over time. That’s really pretty much it! You dump in a set amount of ferts each day. Then do a large water change every 7th day. Is that really harder than squirting them in from a bottle? (If you answered yes, we really need to talk about your lazy factor and whether or not keeping an aquarium is right for you :p) The set amounts are measured using measuring spoons. One trick I like to use, especially if I have a busy week or need someone else to dose my tanks for me, is to measure out the amounts of salts for each day into a weekly pill container. Then on each day I simply open up the pill container for that day and sprinkle it in the tank. EASY! It also helps me keep track of which day I’m on, because I am very forgetful.

The idea is that the plants never lack nutrients. So then, either lighting or CO₂ become the limiting factors in your plants’ ability to grow. It really makes things quite easy if you think about it. So, what nutrients are we talking about? There are two categories of nutrients to understand – Macronutrients and Micronutrients. Macronutrients are those that the plants need a lot of. Micronutrients are those that the plants only need a small amount of. The “Macros” typically include the following salts and contain the bulk of nutrients your plants need a lot of:

(KNO₃) Potassium Nitrate

(KH₂SO₄) – Mono Potassium Phosphate

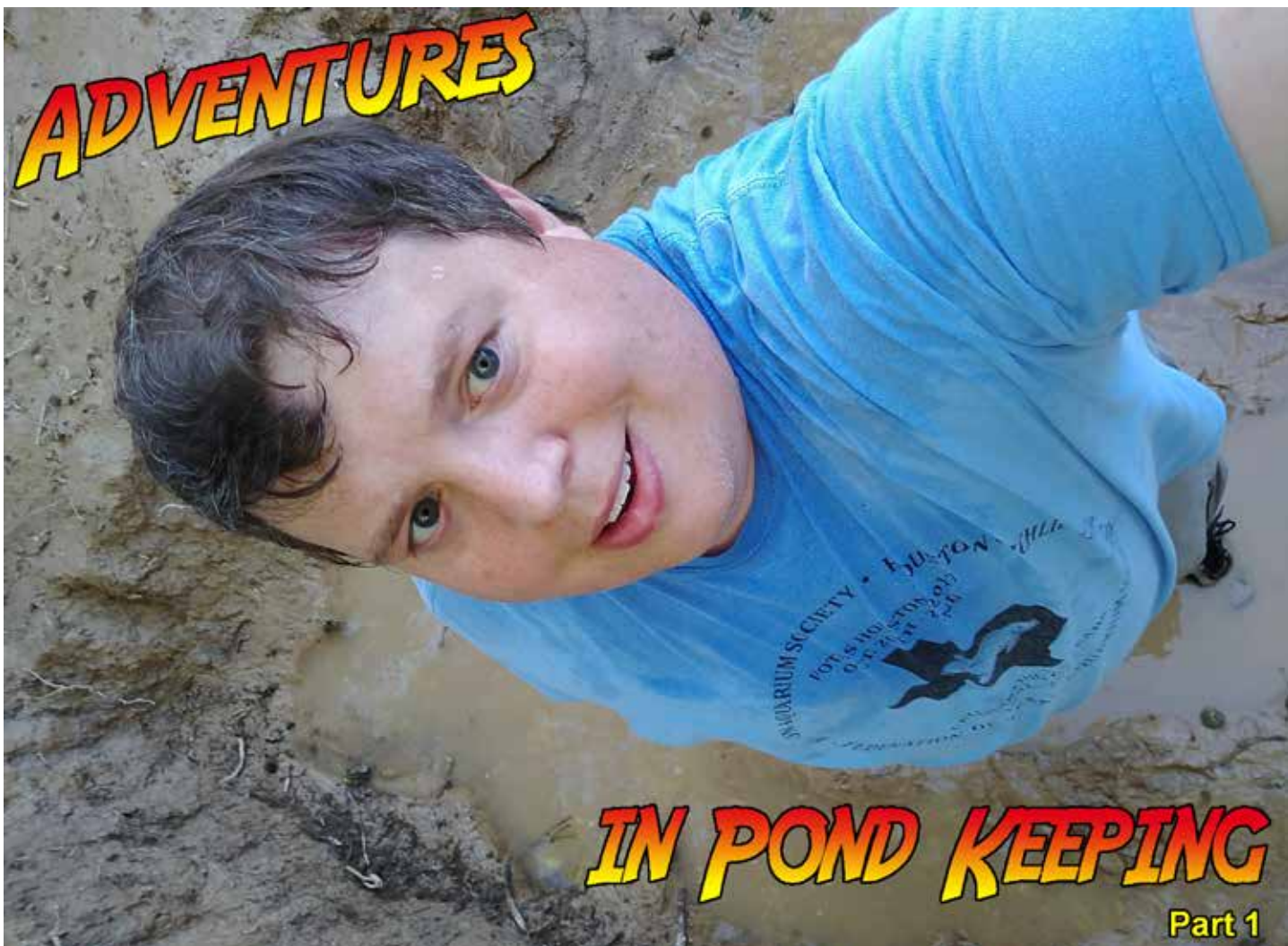
(K₂SO₄) – Potassium Sulfate

The “Micros” are needed in much smaller quantities and in the EI method are provided through a product made by Plantex called CSM+B. This single mixed powder contains the following nutrients: Boron, Copper, Iron, Magnesium, Manganese, Molybdenum, and Zinc. These are dosed on alternating days to prevent an adverse reaction between some of those chemicals. The amounts are specific to the volume of water in the tank. But alterations to the original EI dosing schedule have also been made for lower light and low-tech (no pressurized CO₂) tanks. “But Mr. Aquatic Garden Nerd, I’m scared to put all those strange chemicals in my tank!” Fear not, timid one. These chemicals already exist in water around the world. Plants in the wild have access to these same nutrients. Think of it like food. You feed your fish/shrimp every day or every other day, right? Why not also feed your plants? THIS is the food they like. Why would you want to deprive them of that? Do you hate your plants? I’m kidding with the plant shaming. But seriously. It really is their food. And as for the fish and shrimp, again, these chemicals exist in the wild in varying quantities. I assure you, when used in proper amounts, your livestock will not be harmed.

For those interested in more scientific depth, I highly recommend you go check out this article. It explains a LOT more of the science that I ever could.
<https://www.ukaps.org/forum/threads/ei-dosing-using-dry-salts.1211/>

If you have any questions about proper EI dosing quantities, I’ve got a nice little document that I’d be happy to provide via PM. Or maybe I can talk the admins into uploading it for me. SO... you and your plants enjoy your salts this Thanksgiving you turkeys!!





In January of 2020, I bought my dream home. Unlike most home buyers, I was not concerned with the number of bedrooms and bathrooms, whether it had electric or gas stoves, or what school district it was in, I was mainly concerned with 2 issues: a big yard and a garage. Since this is Fish Tales, you can see where this is going.... I did not want the big yard for growing a garden, I wanted a pond! Nor am I a big car guy.... I wanted a fish room (but that is another story).

Preface

By writing this article I hope to help others who are thinking of doing what I did or something similar. You can learn from the mistakes I made or what I thought worked really well. I will **bold** important items and use a **red bold** font where I made mistakes. I am going to rehash the whole process that I went through. Some of these things you will probably not have to deal with, while there are other issues that you may have to deal with that I did not. As I write the article, the pond is still not complete, so this will be a multipart article. I

am not going to mention total costs in the article, but if you have questions, feel free to contact me as I am not too hard to find.

Background

When I found the house online, I did some research on it. It is in a subdivision that has a Home Owner's Association (HOA). I have heard nightmares about HOA's, so before I made any offers on the house, I got the HOA to agree to the following changes that I planned:

- Cut Down 2 Trees (One not associated with the Pond)
- Dig a Pond
- Have Electricity Run to the Pond
- Plant a Tree
- Put up a Fence
- Install a Sink in the Garage (for the Fish Room)

The HOA agreed to everything, so I went ahead with the house purchase. It was about 2 months before

actual work began.

Digging the Hole

There was a tree where I wanted the pond to be, so that had to be cut down. Before doing any work in a yard with heavy machinery, the machine operators are going to want everything to be dry. This is tough to do in South Louisiana, but finally a week opened up (note: make sure you call 311 before you dig to get all of the utilities marked). The trees were cut down in a matter of hours and the next day, the excavator came out to dig the hole. **I would highly recommend that you do not try to dig the hole yourself unless you have an excavator. There is no way I could have dug this hole myself or even with friends.** I told the operator exactly where I wanted the hole and how deep. Everything was done to my satisfaction, I was now the owner of a hole!

My agreement with the operator was that he would take away the dirt after the pond was dug, but **he suggested that I use the dirt to increase the elevation of the yard.** This sounded like a good idea to me, there were some low spots in the yard that could use dirt, but in reality, this was a big mistake and costly mistake on my part. In reality, the operator just did not want to haul the dirt away.

Now my yard was a giant dirt patch, no grass anywhere! I cannot underestimate the importance of this mistake that I made and how much it cost me. This was the single biggest and costliest mistake that I made. There was no simple fix that I could do where I would just do manual labor to fix it, this cost money.

20/20 Hindsight: I should have had the operator put some of the dirt along the sides of the pond, so that the water level of the pond was higher than the underground water table (foreshadow). I should have used some of the dirt to fill in the low areas (the yard did need dirt in some areas), and then I should have made him haul away the rest of the dirt.

It was done. I had the hole in the ground that would be my future pond and I loved it. It was dry and I could get in there with no issues to do any kind of maintenance that I needed. There were a few roots sticking up in the center and along the edges that would have to be removed, but **I could just cut those in the future, closer to when I got a pond liner.**

That night it rained. Not just a light rain, but very heavy. Literally 2 inches of rain overnight. The next morning I went out to see the whole in the ground, but it was gone. Instead there was a large pond of disgusting muddy water. Not only that, my entire yard was a

Image that I sent the HOA that detailed my plans before I bought the house.



muddy mess! Before I could do any work in there (like cutting those roots and laying down the pond liner), I had to drain the pond.

Luckily my plans for the fish room included 2 1/6th horsepower dirty water pumps (available at any home improvement store). It took the pumps 4 hours to drain the pond and there was still a tiny bit of water at the bottom. I waited a few more days for the pond to dry entirely (nearly).

During the waiting period, one of my friends that used to install ponds told me that I really needed the water level of the pond to be higher than that of the surrounding yard / ground water table. The main reason being that you don't want all of that runoff water going into the pond with all of those nutrients. So off I go to the home improvement store to buy bags of soil...that's right, I have a mud pit for a back yard and I am having to buy more soil to go around my pond.

Installing the Liner and Underlayment

A nice pond cannot just be a hole in the ground that is full of water. You need something to separate the pond from the ground. In most cases, you need a thick rubber pond liner. Doing some research, I also came across something called underlayment. At the time, I did not know what underlayment was, but it

is a material that is used to buffer the pond liner from the ground itself. It helps to keep roots from breaking through the liner. **In ground ponds need underlayment to protect the pond liner.**

Also, as I was doing my research, it was suggested that I use old carpeting to help with the underlayment. I got mixed opinions on the carpet idea. Some said it was great, while others would not recommend using it. The biggest drawback of having carpet under the underlayment was that in the event I ever had to remove the pond, the carpeting would be moldy and rotten. I decided to include the carpet and the underlayment material.

During this break where I really could not do anything, I went to a local place that sold pond liners and pond liner underlayment. I went there with my measurements and they had a liner that would fit nearly perfectly. Finally, I caught a break!!! Had my pond been too wide or long, I would have had to glue multiple liners together. The people selling the liners say it is simple to do, but others that I have talked to that have actually glued liners together say it is a real pain in the ***. Not only did I catch a break on the pond liner, but he was at the end of his roll on underlayment (large rolls of mesh), so in addition to selling me the amount of underlayment that I needed, I also got enough to run 2 additional layers of underlayment for free on my



Excavator digging the hole.

pond (3 layers of underlayment in total).

20/20 Hindsight: Unless you feel comfortable gluing multiple pieces of pond liner together, make sure that your pond can fit within the dimensions of the available pond liners. Pond liner is extremely heavy and cumbersome, it is not an easy material to deal with.

After about 1 week, it was dry enough for me to get back into the pond to cut those roots (the ones that I should have cut initially). The bottom of the pond was still so muddy that I needed plywood to be able to stand and do work. Using the plywood and some large plant clippers, I was able to remove the roots, the plywood; however, became a permanent part of the pond as I was not able to remove it.

With the roots removed and the hole relatively dry, I ensnared a few of my friends to help me put down the carpeting, the underlayment and the pond liner. Both the underlayment and the carpeting were very easy to put down, the liner on the other hand was a beast! This thing must have weighed over 100 lbs and it was awkward to move around. With four of us, we were able to get it where it needed to be and were able to secure it with a few rocks.

That night it rained. Not really a hard rain, but enough to fill up my pond with a few inches of water (or so I thought). The next morning I was horrified. My pond

was completely full of water and the underlayment and pond liner had all floated up and were on top of the water!

Once again, I had to break out the dirty water pumps and drain the pond. After about 4 hours, the pond was empty. With the help of a friend, we were able to rearrange the pond liner and set it in place. The pond was then filled with water.



The hole just after being dug.



The backyard is full of dirt!

20/20 Hindsight: Once you dig the hole for the pond, have the pond liner and underlayment ready to install. Then fill the pond. If you don't, you may have to drain the pond multiple times as I was forced to do.

Rockwork

Before the pond was dug, I went to a local rock yard to buy rocks for the outside of the pond. My plan was to build a rock wall on the back side that was about 3 feet tall and just have some a single or dual layer of rocks around the rest of the pond. I ended up buying a pallet of sandstone / flagstone. The night before the day the rocks were supposed to be delivered, it rained again. It was too wet for the forklift to bring the rocks into the backyard, so the delivery was rescheduled for a week later. This ended up being a blessing in disguise. Once the pond was dug, and envisioned my plans, I realized that I would need a lot more rocks. On the morning that the rocks were to be delivered, I went back to the rock yard and got another pallet of rocks (2 half pallets actually). This saved me money as there was a delivery fee for the rocks, but the fee was the same amount no matter how many pallets of rocks that you bought. So instead of paying for 2 or 3 delivery fees, I only paid one fee.

Using the labor of 2 of my friends the rockwork was placed out neatly. Over time, I noticed some issues and made some changes / upgrades. When we initially set the rocks, the berms were very wide, probably too wide. I ended up moving all of the rocks in front and making the front berm narrower.

20/20 Hindsight: If you are paying people to do the work, have them do it. Don't wait until they have already left before you decide to make changes.

Still to Come

At the time of this writing, I still have a long way to go. I did not discuss my acquisition of live plants and I still need to add a filter(s) to the pond. However, before I can get the filters up and running, I will need to run electricity out to the pond. In addition, I need to set up the waterfalls. Plus, I still need to get fish! I am sure that there will be mistakes made along the way, but feel free to join me on this journey.



**Join us for
Adventures in
Pond Keeping
Part II in the
next issue of
Fish Tales!**

Pond full of muddy water!



Dirt bags around the edge of the pond



Rugs placed between earth and underlayment material.



Jamie Acosta and Fabian Leyva assist with rolling out the underlayment material.





2 of the 3 pallets or rocks needed to go around the pond.



The pond as it stands currently.

Redid the front berm (grass line is where it previously extended to).



Triangle Cichlid

Uaru amphiacanthoides

Article by Chase Klinesteker
Photo by Darrell Ullisch

DESCRIPTION

The Triangle Cichlid, *Uaru amphiacanthoides*, is a very graceful, peaceful, and attractive fish from the Amazon region. In shape and behavior, they remind me of discus, and are found in the same waters as Discus and Angelfish. They are very rare in nature. They have a flat, oval body with a blunt head and small mouth. An elongate triangle extends from behind the pectoral fin to near the base of the tail with separate spots at the tail base and behind the eye. The pattern and color can vary both with the mood of the fish and with different strains. Above and below this triangle the body is colored greenish yellow to brown to golden-yellow in varying intensities. The long dorsal and anal fins are often dark colored and contrast nicely with the body. With proper lighting (and mood), iridescent blue can be seen streaked in the dorsal, anal, and caudal fins. During spawning, the triangle decreases in size and the body turns a much lighter golden-yellow and is very striking. This fish is one of the most chameleon-like fishes I have ever kept, as the colors change frequently. At times they have a golden-yellow eye, but at other times the eyes can be orange or red. With poor health, mood, or water conditions, these fish can turn com-

pletely black. Fry smaller than 2 inches are often colored much differently; with white polka dots on a rust brown body.

The Uaru is closely related to the Discus, and both of these fish share many traits. They can be quite shy and secretive, they prefer warmer temperatures, and they have a graceful, almost majestic presence as they glide slowly through the aquarium. Although Uaru like warm temperatures, they can be kept and bred in the low 80s' and they don't seem to be as sensitive to water conditions or as finicky eaters as Discus are. In fact, Uaru would be an ideal fish for one to obtain and keep if one were thinking of adding Discus later. A large tank of 50 or more gallons would be recommended for them since Discus can reach 8 inches and Uaru 10 inches. Adult Uaru are shy and can be easily spooked if not in the right surroundings. A dark background such as black plastic on the sides and back of the tank is important. A heavy growth of floating plants such as water sprite is helpful to give them security from above, and a couple of large clay pots, wood pieces, or slate help provide hiding places. Give the fish adequate swimming room so they will not hide all the time. Live decorative plants should not be used, as they will be

torn up and eaten by the adults. Even fry as small as one inch will nibble away at softer plants. Poor water quality, illness, shallow tanks, or too bright of lighting will cause nervousness in Uaru. Gouramis, tetras, and peaceful South American Cichlids make good companion fish for Uarus and can help draw them out.

FEEDING

The diet of Uaru can be varied, although they are strongly vegetarian in nature. They seem to do best with live plants (e.g. floating water sprite), a higher vegetable content dry food, and some meat. I use Pond Chow pellets and frozen beef liver for the staples with occasional beef heart, frozen brine shrimp, frozen vegetables, or lettuce for variety. Uaru fry 1 to 3 inches are especially gluttonous and aggressive feeders. They will eat just about anything until their stomachs are quite distended. They are thorough eaters also. Cory catfish will almost starve in a tank with a number of Uaru fry in it, since there is no food left over. The fry like to school, and 6 or more of them increase their confidence and feeding aggressiveness. Adults like to school also---until breeding!

Heavy feeding means pollution buildup so water changes are important. Uaru are actually quite tolerant of some pollution, but they lose appetite and grow more slowly as nitrates increase. They are much more sensitive to water chemistry changes than many fish, and moving them from tank to tank can be hard on them. Water changes should be kept to 25% or less. Uaru can tolerate a fairly wide pH range (4.5 to 7.6+) but they seem to do best and spawn for me between 5.5 and 6.5 pH.

There are many ways to get water in the acid range such as RO units, rainwater, and peat moss filters. The method that seems to work best for me is power undergravel filters with a mature biological base. Over time, even regular city tap water can become acidic. The 2 seventy gallon tanks that I keep my Uarus in each contain 2 powerheads for the undergravel plates with at least 3 inches of pea-sized gravel over the top. Because Uaru are heavy feeders, debris and bacteria build up quickly in the gravel. I partially clean the gravel with a siphon cylinder, but make sure there is adequate biological buildup remaining to maintain the water chemistry. I can maintain the pH in the tanks with water changes. This seems to work very well since

my adult Uarus are very healthy and I have gotten over 30 spawns from 2 mated pairs in about 6 months. One pair spawned so frequently (every 5 or 6 days) that I dropped the temperature to the mid 70s' to give them a rest!

SPAWNING

Spawning Uarus is a challenge but certainly possible. First of all, make sure you look thoroughly for the eggs! The eggs are small and clear brownish, very difficult to see in the back of a dimly lit aquarium (I use a 2 bulb shoplight above the tank, but the water sprite growth on the surface is very dense). My fish probably had spawned 2 or 3 times before I realized it---I could only see the eggs after thoroughly checking with the room lights off and the tank lights on. There is little courtship display and that is mostly slow and deliberate. I did see one pair lock jaws and wrestle for the initial pair bonding, but that has not happened since, and they probably mate for life. The real indication of spawning was that the pair had separated themselves from the other fish in the tank. The pair was slow and deliberate in protecting their territory, but well respected from observing the tightly concentrated other fish. Uaru are almost impossible to sex, although the males seem to be larger. Even the bluntness of the head and the pointing of the anal and dorsal fins seem to be inconclusive. The best way to get a pair is to obtain 5 or 6 fry and raise them together. As with other fish, good food and water changes help. A vertical, angled, or horizontal slate or a large clay pot can be used, although I have even had them clean off to the undergravel plate and lay eggs there! Yes, they move gravel, much more than many cichlids. They have piled up gravel 10 inches against the glass and made a depression nearly 2 feet in diameter. Now you can see why I prefer 2 strong powerhead filters and lots of gravel!

HATCHING

The spawns have varied in size from 75 to about 200 eggs. Articles often state that Uaru will usually eat their eggs or fry. Several times my fish had wiggling fry in a depression in the gravel. However, only once did I observe free-swimming fry with the parents, and they soon disappeared. It seems that at least a few would have survived. The problem may have something to do with the water conditions, because the pairs seemed to be good parents and very protective of their eggs.

The egg hatch rate has been quite good, averaging about 50-60%. I have found that removing and hatching the eggs artificially can work quite well. I use a "siphon on a stick" to go into the tank and remove the eggs. Sometimes I leave half the eggs to see if the parents will succeed in raising the fry, but even though those may hatch and be cared for, they still disappear later. After rinsing the eggs off, they are placed in rainwater with methylene blue under heavy aeration. The eggs hatch in 2-3 days and the fry are removed and placed in clean rainwater. In 5 days the fry are freeswimming. Heavy aeration seems important to keep the fry circulating in the jar and avoid tightly clumping and getting in a bent condition. They show amazing ability to handle current.

GETTING THE FRY TO SURVIVE

That brings us to the hardest part---getting the fry to survive. The fry are very tiny, about the size of apisto fry, with even smaller mouths. They are constantly moving and picking at everything, seemingly trying to feed, and likely feed off the parents slime as Discus fry do. I have tried Liquifry, micro powdered dry food, and egg yolk, but have had only limited success with getting the fry to the brine shrimp stage. It appears that the fry are finicky eaters, water quality must be extremely high, and the food must be moving in front

of them (current from aeration). Even when they begin eating baby brine shrimp, it is difficult to tell since they don't show the typical orange belly. When feeding the fry, the tendency is to overfeed, and the pollution kills them. To keep food in front of the fry, use a small container (e.g. gallon jar), heavy aeration, and change water frequently. Without heavy aeration, the fry are less active and do not survive as long. Rain water or water drawn from the parents' tank seems to be best for them. Water different in pH and composition should only be added slowly later. Transferring the fry to larger containers should be done carefully with the same composition water if possible. Many of the fry perish just before or in the early stages of eating newly hatched brine shrimp. At about 1 ½ to 2 months the fry become less sensitive to water changes. I have raised about 150 fry so far, but it is frustrating to have so low a percentage of survival. Any suggestion from discus breeders would be welcome.

In conclusion, *Uaru amphiacanthoides* is a graceful, colorful, interesting, and challenging fish to keep and spawn. Because of its' peaceful nature, it can be kept with many other peaceful South American species of fish. For those with some experience breeding fish, it can be a top-notch challenge I would highly recommend!



My favorite fish is unquestionably the Triangle Cichlid, or *Uaru amphiacanthoides*. This is proven by the fact that I have 17 “3X5 Computer” cards of information collected on the species when most species have only 2 or 3. I bred and wrote a 3-page article on this fish in 1993, but have recently bred it again and discovered some new information. Because this fish is a definite challenge to breed, I thought I should share. For those serious about breeding it, the 1993 article is on my “Breeding Tropical Fish” website www.chasesfishes.com, in the “Article” section under “Cichlids”.

PERSONALITY

Uaru remind me of Discus, slow and stately. Their mouths are even similar and they both feed their fry with body slime at first. Big and bug-eyed, they seem to have a definite personality and will eat food from your hand. In October of 2017, I purchased 6 2-3 inch Uaru at a SWAMAS auction. I paid about \$70. for them and thought that was high, but later found out on the Internet that they retail for around \$35. each, with adults going for around \$100. Sometimes, this “poor mans’ Discus” sells for more than discus because it is so infrequently bred.

PAIR BONDING

As the 6 fish grew, I put 3 each in two 20-gallon tanks, as no larger tanks were available. When they reached 4-5 inches, they began to sex out, mainly shown by their behavior and treatment of the third fish in each 20-gallon tank. Males are slightly larger and may have slightly longer fins, but that is not predictable. I didn’t realize how strongly they pair-bond, as the third fish in both tanks was killed, and I ended up with 2 pairs. Then one male killed his female and I had one breeding pair. Even after the mated pair laid several batches of eggs, the male started attacking the female, but I quickly removed the female to another tank to recover for a few weeks. This aggression was likely due to not having a large enough aquarium to accommodate all 6 Uaru. Reintroduction of the female brought more attacks by the male, so I waited until nighttime, threw in the female, and turned the lights out. The next morning the pair was doing fine and they soon started laying eggs again.

FEEDING

Uaru are vegetarians. In 1993, my Uaru were in a 70 gallon tank with a healthy growth of water sprite for them to access. In a smaller tank, this was not possible and I decided to feed them mostly pellets. I selected Pond Chow that leans toward more vegetarian fish. Extra

live plants from my other tanks, even if covered with algae, were eagerly devoured. First soaking the pellets in water for 5-10 minutes helped the fish consume them.

BREEDING

The pair bred in a bare 20 gallon-long with an undergravel filter. Although the fish rearranged the gravel considerably, the filter still worked well for this messy-eating fish. They did not lay any eggs in or on the clay pot in the tank. To help clean up, I had a 4-5 inch woodcat in with the pair. As I intended to remove the eggs for hatching, the catfish threat seemed to help strengthen the pair-bond. The mated pair would lay only about 30-40 eggs at a time, but every 5-10 days. They were laid on the glass near the undergravel lift tube in the same spot. I would remove the eggs with a siphon-on-a-stick, which was savagely attacked by the pair. I strongly recommend that you do NOT put your hand in the tank at this time! Eggs left in with the parents did not result in any free-swimming fry, whether from the catfish or hard tapwater.

HATCHING AND RAISING

This seems to be the biggest challenge in breeding this fish. This pair has probably spawned 20 times for me in the last several months, but the hatch rate has been poor or none. I now have around 30 fry from those spawnings. Most times I use fresh rainwater to hatch them in, but from our area it is slightly alkaline, and Uaru come from extremely soft and acid water. Lately I have been acidifying the rainwater and keeping it warmer (80+ degrees), and that may help. It seems that the eggs are very sensitive to any bacteria, so I now use both a sponge filter and bubbler for water circulation in the hatching container, which is about one gallon. Do water changes with clean rainwater. Once the eggs have hatched, the water must be kept very clean until they become free-swimming. Then I add snails and a few pieces of oak leaf. I believe the oak leaf may produce some slime that the fry can feed on for a couple of days before they take baby brine shrimp. The fry are kept in the hatching container and fed for 2-3 weeks before they are adjusted to tapwater and moved to a larger tank.

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<https://chasesfishes.com/wp-content/uploads/2020/02/UARU.pdf>

Pundamilia sp. “Redhead”

Article by Greg Steeves
Photos by Kevin Bauman

Pundamilia sp. “red head” is an unique and beautiful fish from the southern end of Lake Victoria. There are apparently only two locales where populations of this *Pundamilia* species resides. The Mabibi Islands are a home to a variant of *Pundamilia* sp. “red head”. To my knowledge, this particular variant has never made it to the hobby. It is reportedly more elongated with a shorter head, but similar in coloration to the other variant that hails from Zue Island in Speke Gulf. This is the fish familiar to aquarists as *Pundamilia* sp. “red head”. This species has also been called *Pundamilia* sp. “Zue Island” or “Zue Island red head nyererei”.

It is possible that *Pundamilia* sp. “red head” is not an actual nyererei variant. The genus *Pundamilia* was validated by Seehausen and Lippisch in 1998. Six to eight vertical bars are visible on the body (albeit faint), but the Zue Island red head has a much higher body profile than any nyererei variants I am aware of. The belly region is orange and fades to yellow then pink towards the dorsal. The section of the body above the anal fin is green. A lighter blaze runs across the spine. Bottom lip is lightly colored a pale blue. Basic face coloration is pink. Three faded bars run across the forehead. The throat region is deep red and merges into the pink of the face. A faded vertical bar runs across the face and through the eye. The dorsal fin is

bright blue lined and spotted red as it extends. The tail fin is transparent and red colored. The anal fin is a blue green with three to five egg spots. Pelvic fins are black along the first two fin rays and fade to lightly colored red. Maximum size of *Pundamilia* sp. “red head” is around four inches.

At Zue Island, *Pundamilia* sp. “red head” is found in the area between the shore and water not more than 15 feet deep. This shallow water gem can be found over a rocky bottom amidst schools of algae grazing *Neochromis*. No *Pundamilia nyererei* types inhabit their range. *Pundamilia* sp. “red head” at Zue Island is an aufwuchs grazer. Other species in the aquarium hobby from Zue Island include *Paralabidochromis chilotes* and *Paralabidochromis chromogenys*.

In the aquarium, *Pundamilia* sp. “red head” is un-demanding. They are not as aggressive as other *Pundamilia* variants and in a tank with nyererei variants, care must be taken as they can easily be bullied. Suitable Victorian tank mates might include *Neochromis rufo-caudalis*, *Xystichromis* sp. “flameback”, or *Haplochromis* sp. “Kenya gold”. Be certain to carefully observe any mixing of fish from this region. Try to include species of differing body shape and coloration. Any commercial high quality flake food, brine shrimp, and algae tabs should adequately suffice for nutrition. A good regimen is to occasionally mix food sources. A caro-

tene based color flake will cause dominant males to literally glow. Provided that no overly robust species are housed with *Pundamilia* sp. “red head”, spawning occurs readily. As with the other haplochromines of Lake Victoria, the Zue Island red head is a mouth brooder. The eggs are quite small so an adult female would be able to incubate a good sized batch. My spawns thus far have been small, in the 8-14 fry range, but I suspect that before long, broods of near 50 will be possible.

Pundamilia sp. “red head” is not a common species in the hobby. It is available from some specialty breeders. Certainly when more hobbyists are exposed to this

wonderful little fish, demand for it will increase. The Zue Island red head is one of the many furu from the ecologically threatened Lake Victoria. Although it appears to remain in good numbers within it's range, man has proven time and time again how quickly he can cause the extinctions of creatures he shares the earth with through blatant disregard for their habitat. Let's hope we can keep captive populations strong and thriving for many years to come.

References:

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Tips for keeping Planted Tanks

Article by Chris Lewis

I love planted aquariums, and one thing that makes them special is the variety. You will find a huge variety of aquascaping styles, and a vast selection of flora and fauna. There are also many variations in the methods you can use to be successful. The following are some random tips I use to help maintain my planted aquariums.

DIY root tab fertilizers

Root tab fertilizers are a great addition for plants that feed primarily through their roots. You can make your own root tabs with 00 gel caps, and Osmocote Plus or Dynamite time released plant food. The 00 gel caps are empty vitamin gels caps, and can be purchased from health food or vitamin stores. You can also purchase them via online retailers like Amazon.com. Simply fill the gel caps with the plant food. Then place these tabs under your plants, or about every 6 inches across the aquarium. These will last 6-8 weeks or more depending on how many, and how fast your plants grow. I would suggest placing them deep in the substrate.

CFL Bulbs

The spiral compact fluorescent bulbs that screw into normal incandescent light socket are a great option for planted aquarium lighting. First they are inexpensive, and come in a wide range of wattage sizes. Plus you have a wide selection of light fixtures you can use them with. Anything from desk lamps, and clamp on shop lights to nicer looking light fixtures. The bulbs provide an impressive amount of light. This variety makes them a good choice for different tank sizes. Two over a 20 gallon tank would provide high light, and one over a 10 or 20 gallon tank would be low light.



Osmocote - container and close up.



Low Tech planted tanks are not that difficult as this example demonstrates.

Trim leaves and roots

Older leaves can look bad over time. Either developing holes or yellow/ brown spots from nutrient deficiencies. Also, leaves can be torn or damaged by fish. These leaves will not repair themselves. Also, these leaves are using nutrients that could benefit healthy growth. Removing these bad leaves will not only make the plant look nicer it will promote new growth. Also, when first planting, or transplanting species with roots like crypts and swords if you trim the root mass it will also promote new growth.

Mr. Clean Magic Eraser

Those white foam blocks sold for cleaning kitchen counters and such, the Mr. Clean Magic Eraser, are great for cleaning aquariums too. I use them to clean the outside glass, and the inside glass too. It is recommended to only use the original Mr. Clean Magic Eraser as it contains no additional scents. I have been using this for the last 2 years, and

not only does it clean the outside of the glass it's great for removing film or algae from the inside glass too.

DIY CO₂ diffuser

There are many ways to diffuse CO₂ into your tank. Some people use chop sticks, or air stones. However, a more effective way is to use a small power head or internal filter. For my DIY CO₂ setups I use the Mini Elite filter. You can place an air stone on the end of your airline coming from your yeast reactor. Then place that inside the filter.

The air stone and impeller will help break up the CO₂ bubbles. Then the mini filter will dispense the CO₂ into your tank. This will provide better absorption of the CO₂ into the water column and help increase flow in your tank. If you are using a powerhead just run the airline into the intake of the powerhead.



Here is an Elite Filter modified with a CO₂ Reactor.



Trimming plants are a good way to maintain growth and keep them healthy.

Thoracochromis brauschi

Article by Greg Steeves
Photos by Kevin Bauman

Thoracochromis brauschi is endemic to the Fwa river region of Zaire. I have heard the locale of these fish stated as Lake Fwa. This is not a false statement, as Lake Fwa is actually a widening of the Fwa River. Dense vegetation makes collecting in this region difficult at best. There are a number of cichlids endemic to this region but the *Thoracochromis brauschi* is the only one I have ever seen in the hobby. Even this beautiful fish is rare in captivity and I would be very interested in seeing what other gems inhabit this corner of the world.

Both male and female *Thoracochromis brauschi* grow to almost five inches. Females and subdominant males will retain an olive green to gray body coloration while dominant males are brightly colored. Body coloration above the lateral line is a light brown while the belly is white. A black bar runs through the eye. The area around the throat is colored a vibrant blood red giving this fish their common name “blood throat”. The bright blue lips are a beautiful contrast on the surrounding red region of the head. The dorsal fin of *Thoracochromis brauschi* is distinctive to this species. A wide black stripe begins at the front of the dorsal region and extends upwards diagonally dissecting the dorsal in half.

A thin red line extends along the lower edge of the

black dorsal bar with the bottom half of the dorsal fin being hued yellow. *Thoracochromis brauschi* is a maternal mouth brooder. It is a mildly aggressive species. Provided that there is ample room with caves and rockwork scattered throughout the tank, it is possible to house more than one male that will show full dominant coloration. If one is to consider trying to give these fish a home similar to their native range, areas of thick plantings should also be included in their tank setup. This however could be trying, as *Thoracochromis brauschi* males will excavate large pits in the substrate. Males are territorial and will stake out a rock formation to call their own. Any aggression shown by this species is confined to small interspecies conflicts. *Thoracochromis brauschi* does not seem to be bothered by sharing tank space with other species. We have ours housed in a fifty five gallon tank with *Cyprichromis leptesoma* “blue flash”, *Synodontis petricola* sp. “dwarf” and *Synodontis nigrita*. This seems to be a pretty good mix as everyone gets along for the most part. *Thoracochromis brauschi* will completely burrow in the substrate when threatened. I believe this to be an evasion technique to elude predation. The first time this occurred, I was attempting to net out a holding female. As soon as the net entered the water, the *brauschi* disappeared. Another observation of interest; broods conceived in my hard water conditions with high pH are always male heavy. I haven’t experimented

to see if lowering the pH would render more females. *Thoracochromis brauschi* don't spawn with the regularity that most other haplochromine cichlids do. Young females are more prolific than older *brauschi*. Our largest broods have numbered near thirty with 15-20 being the normal clutch size. Gestation is 20 days at 80F.

Captive feeding requirements pose no problem at all for *Thoracochromis brauschi*. Although any and all food is readily accepted, a spirulina, or green vegetable based diet is advisable to compliment the *Vallisneria* grazing witnessed in wild populations. *Thoracochromis brauschi* is a wonderful cichlid for the aquarium. It is very hardy and will accept any food offered. Tempera-

ment is as non-aggressive as a haplochromine can be. What is unfortunate is that this beauty is not readily available in the hobby. I have stumped many well-seasoned cichlidphiles, who had no idea of what this fish was. Although I don't know it's status in the wild, we should make every effort to ensure the beautiful *Thoracochromis brauschi* stays in the hobby.

On a final note, thanks should be given to Heiko Bleher who in 1988, collected in the Fwa River region and brought back some of the first live specimens that found their way into our tanks. Keep a lookout for more fish from the Fwa River region because if they are half as colorful as *Thoracochromis brauschi*, we are in for a treat.



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CARES Special Issue

*Pundamilia
nyererei*



*How do I
join CARES?*

Ameca splendens

Chapalichthys pardalis

Betta simplex

Mbipia lutea "Spotbar"

A Brief History of Lake Victoria