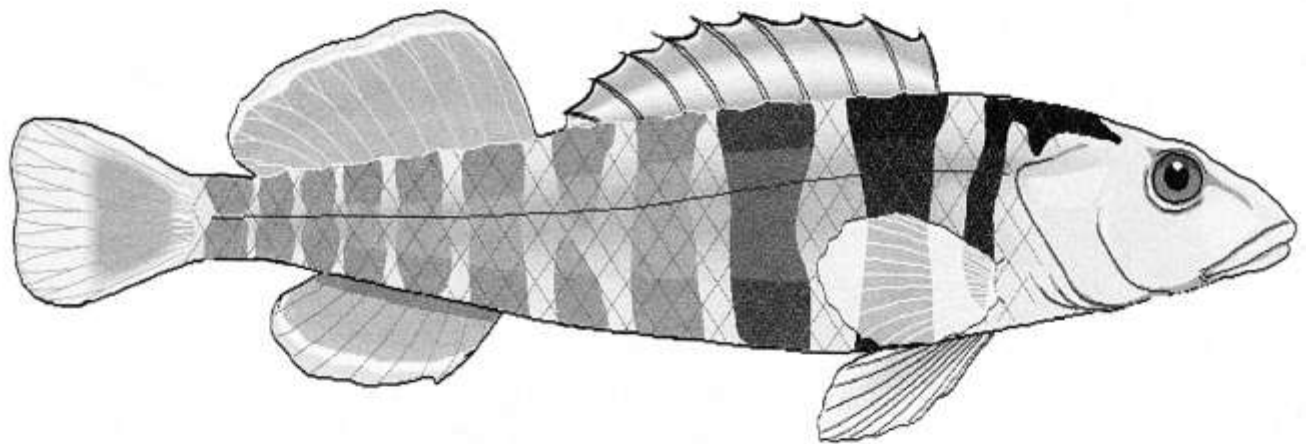


The Darter

March - April 2011



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St. Louis, Missouri

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MASI 2010-2011 Officials		Page 2
Places to Be/Things to See		Page 4
Spawning the Emperor – Tetra That Is	Peter Melady, SAS	Page 5
The Proper Care for Raising Aulonocara	Jim Ellenberger, PCCA	Page 6
Editor’s Notes	Steve Deutsch	Page 8
Breeders Award Program	Steve Edie	Page 9
Thirty-five Minutes to Collect Fish in Columbia	Lawrence Kent	Page 11
Finding a Few Filipino Fish in Lake Taal	Lawrence Kent	Page 13
<i>Nannostomus Marginatus</i> the Dwarf Pencilfish	Brian LaNeve, YATFS	Page 16
From The Fish Room	Ed Millinger	Page 17
Snails, snails, snails	Lisa Reel, YATFS	Page 18
The Dirt On Soil-less Worm Culture	Joe Reich, GAAS	Page 19
Marble Crayfish now Banned in Missouri	Mike Hellweg	Page 21
PVC Devices Helpful for Breeding Fish	Mike Hellweg	Page 22
Horticultural Award Program	Mike Hellweg	Page 24
Member Classifieds		Page 24
Fishes as Dishes	Patrick A. Tosie, Sr.	Page 25
Computer Page	Steve Deutsch	Page 26

MASI’s official web page: www.missouriaquariumsociety.com

Join the all-new MASI FishHeads Forum. See web page for instructions.

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Opinions expressed by the contributors are their own and do not necessarily reflect the opinions of the Missouri Aquarium Society, Incorporated.

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Places to Be / Things to See

SATURDAY April 2, 2011

Executive Council, 7:30 PM hosted by Cory Koch

THURSDAY April 21, 2011

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

SATURDAY April 30, 2011

Workshop @ Gardenville Masonic Hall

SUNDAY May 1, 2011

Auction @ Gardenville Masonic Hall

SATURDAY May 7, 2011

Executive Council, 7:30 PM hosted by Mike Hellweg

THURSDAY May 19, 2011

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

SATURDAY June 4, 2011

Executive Council, 7:30 PM hosted by Steve Edie

THURSDAY June 15, 2011

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

SUNDAY August 14, 2011

Auction @ Gardenville Masonic Hall

SUNDAY November 13, 2011

Auction @ Gardenville Masonic Hall

Membership



Yearly membership in the Missouri Aquarium Society, Inc. is \$20 per calendar year. Membership includes the Darter subscription for the year, which is currently 6 issues. New memberships and renewals can be submitted at club functions such as meetings and auctions, or by contacting Ron Huck, our membership chair.

Spawning the Emperor - Tetra That Is

by Peter Melady

Reprinted from the July 2010 Aqua Antics of the Sarnia Aquarium Society

This spawning report has its start last October when we did a shop hop to London. One of our stops was at Aquarium Services where I spied some really nice adult Emperor Tetras, *Nematobrycon palmeri*. I purchased six and tried to get them to catch at least two pair. As it was I got 2 males and 4 females. They went into one of my 15 gallon special tanks along with some juvenile rainbows to quarantine in case of disease. They didn't have anything and really looked good in this tank. One of the males was a little 'too active' and managed to harass the other male to death. He then turned his attention to the females and they reacted by trying to hide from his unwanted advances.

Emperor Tetras are native to rivers of Columbia, South America. They are easily sexed by two things. When adult the male has an extension of the central rays of his caudal fin and he has lovely blue eyes versus yellowish for the female. The early literature has them listed as problem fish needing soft water of less than 6 dH. They have been bred so many times that the hardness is not that critical and they will take a few degrees above. Since our tap water is 6-8 dH, I thought that it should be ideal.

Okay so I've got this male chasing the females to death. It was time to try and spawn them. I have a 3 gallon tank of the old style, stainless steel frame and slate bottom. I decided to set it up using aged tap water and some acrylic spawning mops from my killie days. The water wasn't too warm at 25°C and I didn't use any filtration. I placed my male and one of the larger females in at night and waited to see what would happen. I also set up a pair of *Pristellas*, *Pristella maxillaris*, into a 2 ½ gallon tank next to them with the intention of getting them to spawn. The next morning I checked to see if they had spawned and there was nothing in both tanks. I don't feed the adults when they are in spawning set ups so I need to keep a close eye as when they do spawn they might just gobble all the eggs up. The second morning I checked and noticed small golden coloured eggs on the bottom so out the adults came. I added some methylene blue to ward off fungus and waited. I should mention that I also covered the tank with a towel as tetra eggs can be very light sensitive. I checked every morning to see how things were going and 2 days after spawning saw movement and knew that they had hatched. Good, so now I had to raise them. Four days after spawning they were moving around more so I added a pinch of APR (Artificial Plankton Rotifer) to the surface of the tank and hoped that they would eat it. A check later in the day showed that they were indeed eating it. Three days later I added a drop of newly hatched brine shrimp and from the pink bellies I knew that they were moving up to the larger food. I changed approx ¼ of the tank water every 3-4 days and replaced it with well aged tap water. I was hoping that I would get a reasonable number of fry as I had only seen about a dozen eggs on the tank floor. Three weeks after they had spawned I removed one of the spawning mops and found that there were quite a number. They have posed no problems for me and growth has been steady. Now at 60+ days I have about 50 nice miniature emperors. The genus *Nematobrycon* along with *Inpaichthys* is one of my favourite groups of Tetras along with the 'Rosy clade'. Now with my success with the first one I really hope to try some of the other ones in my interest group.

One of the big motivators in my interest is a series of articles in TFH magazine, The Breeders Challenge, between Ted Judy and Mike Hellweg. They are in a competition between themselves as to who can spawn the most fish in a year. They are using mainly common pet store fish and the series is trying to get the average hobbyist to see how easy and rewarding it is to spawn your pets. It is truly an interesting series of articles. Maybe next year we can get one of them to come to our annual talk and be further enlightened.

The Proper Care for Raising *Aulonocara* (Or How Many Peacocks Can One Person Kill?)

By Jim Ellenberger

Reprinted from the May/June 2010 Cichlidae Communiqué of the Pacific Coast Cichlid Association

The species *Aulonocara* from Lake Malawi is one of the most beautiful species of fish imported from the Rift Lakes in Africa. The males turn on a dazzling display of colors if given the right conditions. If anyone wants a brightly colored show tank, these fish are the ones to raise. Of course, you will have to know how to keep them if you want this color. This article will give anyone the right directions for raising *Aulonocara*.

Let's start with the basics: *Aulonocara* come from a very alkaline (pH 7.0 to 9.5) and hard to very hard (200 to 700 PPM hardness) Lake Malawi water. Most, but not all, are rock dwelling Cichlids. There are a few that like sandy areas but the majority inhabit rocky areas. Food is not a problem in the aquarium as all *Aulonocara* will take flake food, krill, and pellets without a fuss. In the wild they eat small insects and crustaceans.

There are many different species of *Aulonocara*. Some get very brightly colored while some get just a little color. My personal favorites are color morphs of the *Aulonocara jacobfreibergi* group. These usually have several different colors ranging from blues to yellows to reds and oranges. "Jakes" (as they are affectionately known) from Otter Point or Mamalela (Lemon Jake) are probably the best looking.

Most *Aulonocara* have some form of blue coloration but there are two species of yellow peacocks: *A. baenschi* (more blue in the face) and *A. Maleri*. The Germans have developed a strain of *A. Maleri* that is red (German Red or Rubin Red). This red has been line-bred into these fish and is quite beautiful. Some of the blue/yellow forms are *A. korneliae*, *A. steveni*, or *A. Sp. "Mbenji"* (although much more blue than yellow). Another type of *A. stuartgranti* that is called the "Flavescent" has a yellow body with a blue dorsal and face - very striking!

Blue peacocks include *A. stuartgranti*, *A. Sp. "Maulana Bi-color 500," A. Sp. "Regal," A. hueseri* (Midnight Peacock), *A. jacobfreibergi*, *A. hansbaenschi* (Red Shoulder Peacock), most of the *A. Sp. "Chitande"* types, *A. ethelwynnae*, *A. gertrudae* "Jumbo Blue," *A. saulosi* (Greenface), and *A. Sp. "Walteri."*

There are a couple of more unusual species; one is almost black with a bright yellow blaze from the rear tip of the dorsal, all the way to the nose. This is the Sulferhead or *A. maylandi*. There is a similar species with a white forehead that is not quite as striking - *A. kandeensis*.

As you can plainly see, there is quite a variety of species out there to choose from, in mostly blue and yellow, but some shades of red and even green. Now your biggest decision is...which one(s) should I buy to raise to adults???

The best way to raise them is to purchase 6 to 12 one inch specimens from a reputable source. They all look the same at this size so you should see for yourself what the parents look like. It is also a good idea to check out the breeder's facility, if possible, to see what other types of *Aulonocara* they keep and to see if they are kept separate. Yes, this is one of the most important points that you should be aware of with *Aulonocara* - ALWAYS keep different species separate. You can not tell them apart until the males color up. You will never be able to tell the females apart unless you have worked with many different species for many years and even then there will be identification problems with the females.

Before you even purchase your 6 to 12 one-inch fish, you should decide where they should go. A 10 gallon tank with some sort of biological filtration should be just fine. Just make sure that the water is between 74 degrees F. to 78 degrees F., is free of chlorine and/or chloramines, and the biological filter has been cultured. A sand or gravel substrate can be added if you like. Just to be on the safe side, check the pH and make sure it is above 7.2. If everything is acceptable, go and procure those fish!

If you just want to grow these little guys up to be beautiful show fish (Jojo), you can skip the next few paragraphs. If you want not only to grow them up, but also to get them to spawn - read on!

Now comes the fun part - watching these little silver fish grow. When they start to reach the two-inch size, one of the males will start to color up. At first he may just darken slightly or the dorsal fin may change color. Anyway, this is the time to start another tank. A 20 gallon set up as before will do just fine. Now take this colored-up male out of the 10 gallon and put him in the 20 gallon. Within a couple of weeks, another male should start to color up. Put him into the 20 gallon tank with the first male and keep removing males until no other fish colors up in the 10 gallon.

You now will have a choice to make - which male to start your spawning with. Take the best looking male out of the 20 gallon and put him aside for a while. Move all of the other males into a bucket so you can decorate the 20-gallon tank. This is where the spawning will take place. You will need to make several caves. This can be done with clay pots, rocks, or anything else that you may wish to use. Just be sure to have anywhere from 5 to 6 caves that the females can hide in. Clay pots are my personal favorite; just lay them down on their side and the fish will do the rest. *Aulonocara* males like to dig, so make sure that any rocks or clay pots are resting firmly on the bottom of the tank. This is done so the male does not dig out from under a rock and have that same rock come down and crush him.

Take the male that you put aside and put him into the 20 gallon tank. Take all of the remaining females and put them into the tank with the male. Take the remaining males that are in the bucket and put them into the 10 gallon tank. These males will make good show fish, good trade-ins at the fish store, or bring good money at the fish club auctions. But remember- don't get rid of them all just in case something happens to your breeding male.

Now your attention should be focused on the 20 gallon tank with your male and females. The male should really turn on the colors and try and attract the females. It may take a while, as the females do not mature as rapidly as the male, but eventually they will spawn. It may take some doing on your part to get the females into the right condition. You may have to do extra water changes, feed twice a day, feed different foods, or even change the tank's temperature by raising it a few degrees to get the females "in the mood."

The indications that a female has spawned is that she may hang by the top in a corner of the tank, she looks like she is chewing food when there is no food in the tank, and her throat has a bulge in it just below her mouth. If she is indeed holding, you have several choices to make. You can allow her to hold and hope that some of the fry survive in the tank, you can remove the female to another tank and let her release there, or you could strip the female and artificially raise the eggs. The female will hold the eggs/fry for about 28 days; you do not have to make a decision right away.

Of the three choices, the first is the worst. If you are not into spawning these fish, this is the choice for you. Since the adults will eat the fry, (including the mother after the fry are released for a while) most of the fry will be eaten unless there is an area that has lots of small rocks that the adults can't get into. If the spawn size is 25, and you use the "not do anything" method, only 1 to 3 will survive.

Moving the female to another tank is much better, as you can then allow the female hold with some privacy. There are a couple of drawbacks to this method. First, you need another tank. You also need to have the biological filter cultured and the water aged for the female. Another small problem is that sometimes the females will not release the fry at all.

The fry will die in her mouth of starvation (personal observation). The best way to get fry is to keep the female in the original tank and strip her after about 15 - 21 days. Stripping is where you take the fry from her mouth. This is not too difficult but it does take some practice. There are many different ways of stripping the female but the easiest way is to gently hold her it one hand over a small dish of water and using a BIC pen cap, place the edge of the pen cap over her lower lip and slowly pry open her mouth. Dip her mouth into the water and some of the fry should come swimming out. After about 30 seconds, place her back into another small bucket of water and let her rest. Repeat the stripping process until no more fry come out of her mouth. This procedure will get easier with experience.

Stripping the female has a couple of big advantages - first, the female is allowed to stay in the main tank for the entire time. This means that she will not be perceived as a new fish after the stripping is complete as she will only been out of the tank for a short while. With the removal to another tank method, the female may be picked on too much when she has been returned to the main tank once the fry have been released. The other big advantage is that the female, if stripped early (3 to 10 days), will not be "out of condition" and will be able to spawn sooner. Assuming it takes 8 weeks after the fish has been stripped of the fry, and the fry are stripped at 2 weeks, the female will be ready to spawn in 8 more weeks for a total of 10 weeks from spawn to spawn. If the release method is used, the female will be in isolation for an extra 2 weeks. Usually it takes a little longer for the female to recover using the natural release method so let's add 10 more weeks for conditioning for a total of 14 weeks (4 weeks isolation + 10 weeks conditioning) spawn to spawn. These four extra weeks don't seem like much but if you are into spawning these fish, about every three months you'll get an extra spawn.

If you have chosen to either strip the female or have placed the female into another tank, you will still need another tank in which to raise up the fry. A smaller tank is better for the fry to find food, but a bigger tank will not have problems if you feed them too much. A 5 to 10 gallon tank with a cultured sponge filter is perfect. Any type of outside power filter may suck up the fry and undergravels are not really that good. With a sponge filter the fry can't be sucked anywhere and particles of food will get stuck on the outside of the sponge where the fry can eat it.

About this time, you will need to learn how to raise brine shrimp. The baby brine are the perfect food for your new fry. Two feedings a day and the fry will grow rapidly. After a couple of weeks, you can start with finely crushed flake food.

Please do not mix these peacocks with any other fish. Not only keep them segregated from other peacocks, but also do not mix them with any other type of Cichlid. Personal experience has shown that the Mbuna from Lake Malawi can kill off a bunch of peacocks very quickly even when both are just small fry. The Haps from Malawi are not much nicer, as they usually grow faster and can keep the peacocks from getting food. So just keep them separate until they are adults. When they are adults, and you want to put them in a show tank, pick out your best males and put them in. They should do just fine and at this point you can even mix different species. If you add females, they will spawn with ANY male, so if you do add females make sure that none of the fry survive (they most likely will be a cross) unless there is only one species in the show tank.

Have fun raising these beautiful "Peacocks" of Lake Malawi. The only reason that you can possibly have for not liking these fish is if you are colorblind. Just please don't get them mixed up.

References:

Konings, Ad, Ad Konings Book of Cichlids and all the Other Fishes of Lake Malawi, TFH Publications 1990.

Editor's Notes:

Lawrence Kent sent me an article at the end of last year, but we delayed publication for an issue hoping for better identifications. He then sent me another article, so this issue we have two. We also have articles from Mike Hellweg, Ed Millinger, and Pat Tosie, as well as several exchanges. I hope you find something you are interested in, and if you don't either write something or let me know what I should be looking for when I search the exchanges.

Due to insanity at work I am late getting this issue to Charles to print, so if this is later than usual it is my fault for not being able to meet a deadline.

Upcoming article deadlines (suggestions?) are April 15, June 15, August 15, and October 15.

BAP Report

Steve Edie

Member	Species	Common	Pts	Total
<u>Jan 2011</u>				
Marc & Kathy Daly	<i>Girardinus metallicus</i>	Black Chin Livebearer	5	644
Charles Harrison	<i>Limia perugiae</i>	Perugia's Limia	5	2340
Steven Hoffman	<i>Ancistrus</i> sp. "Albino Bristlenose"		10	85
Jerry Jost	<i>Pelvicachromis pulcher</i> "Lagos, Nigeria"		10	985
Jim Miller	<i>Psammochromis riponianus</i> @		20	2389
Derek Walker	<i>Altalamprologus compressiceps</i> "Gold"		15	1689
Derek Walker	<i>Ancistrus</i> sp. "Long Fin Albino Bristlenose"		10	1699
Derek Walker	<i>Xenoporphus captivus</i> "Illescas" * @		35	1734
Derek Walker	<i>Zoogoneticus quitzeoensis</i> @		30	1764
<u>Feb 2011</u>				
Jack Heller	<i>Tateurndina ocellicauda</i>		15	165
Mike Hellweg	<i>Lamprologus ornatipinnis</i>		10	4189
Mike Hellweg	<i>Neolamprologus brichardi</i>		10	4199
Jerry Jost	<i>Ilyodon cortesae</i> @		30	1015
Cory Koch	<i>Benitochromis batesi</i>		15	1672
Cory Koch	<i>Benitochromis nigrodorsalis</i> # @		15	1687
Cory Koch	<i>Callochromis stappersii</i> *		20	1707
Cory Koch	<i>Gymnogeophagus labiatus</i>		10	1717
Cory Koch	<i>Hemichromis letourneuxi</i> "Barrage Lake, Ouagadougou, Burkina Faso" *		15	1732
Cory Koch	<i>Mbipia lutea</i> # @		10	1742
Cory Koch	<i>Pyxichromis orthostoma</i> ** @		30	1772
Gary McIlvaine	<i>Hemichromis</i> sp. "Moanda" *		15	1148
Gary McIlvaine	<i>Maylandia esterae</i>		10	1158
Gary McIlvaine	<i>Moenkhausia pittieri</i>	Diamond Tetra	15	1173

Gary McIlvaine	<i>Poecilia reticulata</i> ^	Blue Guppy	1	1174
Gary McIlvaine	<i>Poecilia reticulata</i> ^	Pink Guppy	1	1175
Gary McIlvaine	<i>Rocio octofasciata</i>	Jack Dempsey	5	1180
Gary McIlvaine	<i>Xenophallus umbratilis</i> “Arenal Volcano, Costa Rico”		15	1195
Gary McIlvaine	<i>Xenotoca eiseni</i> “Rio Compostela” #@		15	1210
Gary McIlvaine	<i>Xiphophorus alvarezi</i>		10	1220
Gary McIlvaine	<i>Xiphophorus</i> sp. “Domestic Swordtail”	Hi-Fin Swordtail	1	1221
Jim Miller	<i>Hemichromis lifalili</i>		10	2399
Jim Miller	<i>Nannostomus mortenthaleri</i>	Pink Pencilfish	20	2419
Jim Miller	<i>Paralabidochromis</i> sp. “Uganda Fire Red”		10	2429
Nick Scarlatis	<i>Aulonocara jacobfreibergi</i>	Eureka Red Peacock	10	10
Nick Scarlatis	<i>Hypsophrys nicaraguensis</i>		15	25
John Stollhans	<i>Herichthys carpintis</i>	Green Texas Cichlid	10	70
John Stollhans	<i>Poecilia wingei</i>	Endler’s Livebearer	5	75
John Stollhans	<i>Xenotoca eiseni</i> @	Red Tail Goodeid	30	105
Rick Tinklenberg	<i>Fundulopanchax gardneri</i> “Inidere”		15	2130
Rick Tinklenberg	<i>Limia nigrofasciatus</i>	Humpback Limia	5	2135
Rick Tinklenberg	<i>Pelvicachromis taeniatus</i> “Nyete” *		20	2155
Rick Tinklenberg	<i>Xiphophorus meyeri</i>		5	2160
Derek Walker	<i>Ilyodon xantusi</i>		15	1779

* = First MASI species spawn (5 point bonus)

** = First MASI species and genus spawn (10 point bonus)

*** = First MASI species, genus and family spawn (15 point bonus)

@ = C.A.R.E.S Species at Risk (Double base points)

= Species previously submitted = 0 points, except for C.A.R.E.S. = base point bonus

^ = Species previously submitted, limited points for additional color varieties

Sources:

Cal Academy - <http://research.calacademy.org>

CARES - <http://www.carespreservation.com>

Thirty-five Minutes to Collect Fish in Columbia Heading South for Work (with a net in my suitcase)

Lawrence Kent

In August I travelled to Cali in southwestern Columbia to participate in a series of meetings for plant breeders and other scientists working on the tropical root crop cassava. I packed a net and a photo tank, just in case there would be time to look for tropical fish.

Cali was once the home of the Cali Cartel, famous for its violent narco-trafficking. Nowadays, the place isn't nearly as dangerous, but my employer paid a security agent to accompany me nonetheless. He proved to be helpful in catching fish.



This drainage ditch near the settlement of Boquia was a good spot to net out small fish

Four days of meetings and consultations kept me busy from dawn till dusk, but on the fifth day our hosts at the International Center for Tropical Agriculture decided to take us out on a field trip. I got in the bus along with ten crop breeders and five molecular biologists and headed north of Cali, up the Cauca Valley.

Our destination was the touristic town of Salento, nestled in the mountains of Quindío Department. This area of Colombia is famous for the quality of its coffee plantations. We also planned to visit some cassava farms.

A Quick Rest-stop Presents an Opportunity

After two hours on the road, we were drawing close to our destination. Our leader – an Argentinian named Hernan Ceballos – spotted a small river known as Quindío and told the bus driver to stop. He knew I was interested in looking for fish. “Let’s relax here for 15 minutes,” said Hernan, signaling for me to get my hand-net out of the trunk.



This *Hyphessobrycon* species distinguishes itself by the red in its unpaired fins



We pulled these orange *Hyphessobrycon* species from a drainage ditch

My colleagues strolled around and drank up the cool mountain air, while I ran down to the river bank to look for fish. The water was cool and fast moving – good for trout but not for most tropical fish. I saw nothing. Knowing that I needed help, I asked for it from a local boy who emerged from his house in the adjacent settlement of Boquía.

He took me over to a weed-choked ditch that ran parallel to the river. We climbed over the barbed wire fence and started dipping my net in the murky water. It took only a minute to start finding beautiful little fish, which I put into a glass photo tank for some quick photos. Luckily, a colleague from the Bill & Melinda Gates Foundation had brought along an excellent point-and-shoot camera.

Characins and Catfish

The first fish were characins – beautiful little Colombian tetras. My guess is that they were *Hyphessobrycon columbianus* but I'm not sure. I'm hoping the Darter will publish a few of these pictures so that others can provide help in identifying these fish. One group of these tetras had red tails and adipose fins, while the other had orange caudal and anal fins with shimmery orange and green bodies, almost gold-dusted.

Another characin we pulled from that ditch was larger – maybe four inches long – with a sturdy face, silvery sides, and a tail fin divided by a black dash with a red base. My search for a match on fishbase.org led me to believe it might be an *Astyanax* species, perhaps *fasciatus*.

We also caught some very small catfish. The first one, which looked like a small bull-head, was probably a *Rhamdia* species. I emailed its photo to Mike Hellweg who helped me make a tentative identification. Mike explained that there are over 60 species in the *Rhamdia* genus, with more than 30 found in Colombia, including the famous red-tail catfish. It wasn't possible to identify the one we caught to the level of species. *Rhamdia* are nocturnal, opportunistic carnivores.

The second catfish was eel-like, with no ventral fins and a small dorsal fin situated at the far posterior end of its back, near the tail. I emailed its photo to Mike, who tentatively identified the specimen as “most likely an undescribed member of the parasitic genus *Eremophilus*.” I searched for this fish on the web and learned that *Eremophilus mutisii* originates in Colombia where it uses the vascularized central portion of its stomach for aerial respiration. Air ventilation takes place during a rapid dash to the surface with the expiration of old air preceding inspiration. The fish's reduced swim-bladder is associated with a benthic mode of life (from a 1987 article by P. Cala, cited in Wikipedia).



This one might be *Astyanax fasciatus*, but I am not sure



This eel-like catfish may be an undescribed member of the parasitic genus *Eremophilus*



This bull-head like catfish, collected in Colombia, may be a *Rhamdia* species

Adios, Rio Quindio!

“Time to go” announced Hernan Ceballos, and everyone piled back on the bus. I looked at my watch and saw that I’d been able to stretch the allotted 15 minutes into 35, but it was now my obligation to rejoin the group. It was tempting to try to bag up and bring home some of those orange Colombian tetras, but I resisted the temptation, knowing the obstacles ahead and not wanting to further delay my colleagues. I paid some tips to the local boys and headed to Salento.

It certainly wasn’t an in-depth exploration of the fish of Colombia, but it was fun. We saw a quick sample of what this country’s waterways have to offer, making the most of the available thirty-five minutes. Then it was time to go back to discussing the science of cassava.

Send your comments or identification ideas to lawkentnorton@yahoo.com, and God bless you, and your fish.

Finding a Few Filipino Fish in Lake Taal

Lawrence Kent

Last month (December 2010), I took a trip to the Philippines for work-related meetings at the International Rice Research Institute in Los Banos, about 30 miles south of Manila, the capital. There I met up with Peter Beyer, a German scientist friend of mine who is an accomplished aquarist. We decided that we would step away from our work for a few hours on Saturday to look for fish in Lake Taal, a volcanic crater lake about an hour further south. Both of us had packed dip-nets in our suitcases, just in case such an opportunity should arise.



Peter Beyer netting for pipefish in Lake Taal with a volcanic island in the background

Careful, Volcano

Lake Taal is a freshwater lake situated within a caldera formed by very large eruptions over 100,000 years ago. The lake is about 15 miles in diameter, and in its center lies a small island dominated by an active volcano also called Taal. In June 2010, the Philippine Institute of Volcanology and Seismology



This picture was taken on the banks of Lake Taal of a freshly caught pipefish



This motorized skiff transported the author's party across Lake Taal

raised the volcano's status to Alert Level 2, which indicates the volcano is undergoing magmatic intrusion which could eventually lead to an eruption. The main crater remains off-limits because hazardous steam-driven explosions may occur, along with the possible build-up of toxic gases. Upon arrival at the lake's shore, we immediately waded into the shallows and started pulling our nets through the abundant aquatic vegetation. This yielded the first fishes: a couple of tilapia (probably escapees from nearby fish farms), a small goby, and a pipefish.



Lawrence, our author, examines the catch while boating out to the next collections spot
(photo by Gene Kahn)

We bagged up the latter two, and then agreed to a local boatman's offer to transport us across the lake to a "better spot" on the island.

On the island we had little luck. We pulled our nets through the weedy shallows, but caught no fish. Pollution from a series of horse stables on the shore was running into the water and creating algae blooms. This wasn't a good spot. We climbed back into our hired skiff and motored over to another, much smaller island. There the water was clearer, but we still had little luck – we caught only one more goby and one more pipefish. Our time was limited, so we gave up and zoomed back to where we started. As we cut through the waves, the wooden skiff kicked up big splashes, smacking our faces with warm water.

Back on the mainland, we worked the shallows one last time, catching one more pipefish and an archer fish. I put them in a photo tank by the shore for some pictures.

Good Shots and Tricky Pipes

Archer fish are well-known for their incredible ability to shoot water from their mouths to knock down insects flying just overhead or sitting on overhanging branches. They can hit their prey with great accuracy at distances of up to five feet. I observed a group of ten of them lurking under a gangplank by a small wooden boat, but didn't see any shootings.



The banded archer fish *Taxotes jaculatrix* shoots beads of water to knock down insect prey



One of the confusing pipefish brought back to Germany, maybe part of the *Hippichthys heptagonus* species complex
(Photo by Peter Beyer)



One of the unidentified gobies collected in Lake Taal. Its species will be revealed when it reaches adulthood
(Photo by Peter Beyer)

The archerfish family (Toxotidae) consists of seven species. The one I caught was most likely the banded archerfish, *Toxotes jaculatrix*. Archerfish make good aquarium subjects, particularly in a brackish water set-up with a few sticks placed above the water where crickets can be placed, but I threw the one I caught back into Lake Taal.

We couldn't identify the species of the gobies either – they were all juveniles, and won't be distinguishable until they grow up and take on some colors. Peter brought a few home to Germany to raise to adulthood.

The pipefish also turned out to be tricky to identify. I sent photographs to Mike Hellweg back in St. Louis to seek his advice. According to Mike -- a real expert in this family of fish -- there are about six species of freshwater pipefish found on the island of Luzon in the Philippines, but only one is recorded from Lake Taal - *Hippichthys heptagonus* (originally described as *Syngnathus djarong* in 1849, and as *Bombania luzonica* in 1927, then later as *Syngnathus djarong luzonica* in 1935). This fish is currently part of the “*Hippichthys heptagonus* species complex,” but as more study is done, it might revert to the original species name of *djarong* or of *luzonica*, depending on how the complex breaks out.”

According to Mike, the main characteristic of *Hippichthys heptagonus* is a dark line running along the lateral line and through the eye, ending on the tip of the snout. When the males are brooding, they turn a deep purplish gray with silver or golden bands depending on population.

Peter, who took three of these fish back home to Germany to study more closely, isn't sure if these fish are *H. heptagonus*. Peter collected *heptagonus* on an earlier trip to Lake Taal, and reports that “the pipefish we found [in December] are definitely not this species, and I don't understand this at all! The ones we caught are a lot bigger and remind me of *Microphis brachyurus* (of Africa) or *Doryichthys boaja* (South-East Asia). In short, I don't know what species this is, and I have not seen it in Lake Taal before. And I don't understand at all why we could not find *Hippichthys heptagonus*. Seems like we need to go again!”

I am a new-comer to pipefish and cannot sort through the confusion. I would be more than happy, however, to find an opportunity to travel with Peter (or Mike) to Lake Taal again. I just hope that volcano doesn't blow up and kill everything in the meantime! God bless you, and your fish.



An expanded line of MASI Logo merchandise is now available from Café Press. Derek Walker has picked up management of the site and added many new items. Pick from T-shirts, jerseys, caps, tote bags, coffee cups, and more.

Go to www.cafepress.com/MissouriAquariumSociety to view and order the merchandise.

Nannostomus Marginatus the Dwarf Pencilfish

By Brian LaNeve

Reprinted from the January/February 2011 Youngstown Aquarist of the Youngstown Area Tropical Fish Society

I obtained four of these fish from a local pet store about three months ago. I have found this specie to be very peaceful and a bit flashy. With the four fish I purchased, I ended up with only one female. They are a great fish for someone without much room due to their peaceful nature and small size. They also eat just about everything I have offered to them. I have noticed that instead of swimming together as much as characins do, this fish seems to almost hover. Picture a humming bird if you will. Other traits I have observed is they seem to fade once the lights are turned off and take a considerable amount of time to color back up when the lights are on.

The information that follows is general husbandry that I have obtained from several tanks.

Ph range: 5.8 - 7.3

Water hardness: 14 20

Temperature: 75 - 80 degrees

Origin: South American, Amazonian River Basins

Life Span: 2 to 5 years.

Some precautions should be taken when feeding this fish because it seems to be very nervous. I on the other hand did not notice this to be true. But I did keep them in a heavily planted tank, with other tank mates.

Sexing: Adult males are more slender then the females. This is especially easy to notice when both sexes are conditioned for spawning. Also, the males will have red fins. When not in spawning condition, the red in the males fin will vary from either a reddish tan to almost no red at all.

My set-up: I use a bare bottom 2 1/2 gallon with a glass lid. A well seasoned sponge filter, a heater set to 80 degrees and several clumps of Java Moss and some duckweed. For lighting, I used an over-head shop light mounted about 9 inches above the tank. I only turned on the light for brief periods every day. From 4:00 to 8:00 each day. I performed weekly water changes of just (1/2) gallon of distilled water that I preheated to 78 degrees.

I placed the fish in the tank and feed them a diet of live blackworms and once a day in the evenings. At first I would chop the worms up using a razor blade. After the fish obtained some size I just feed them the worms whole. Placing maybe between 6 to 8 worms in the morning and doing the same about 16 minutes later. Making sure not to over feed. I did this every evening just around 5:00.

Spawning. It was when I noticed that the fish could eat the entire black worm with little to no diffi-culty, that I also noticed that three of the fish now have a much brighter red color. They seemed to dance next to each other in a downward position making their already bright color bodies and fins even more stun-ning. I started to increase water changes now (1/2) gallon of pre-heated distilled water to every other day. Along with longer light and more feedings. I now started to feed the fish with the live black worms at 3:00 and again at 5:00. Also now turning the lights on at 3:00 as well. It was on the fourth day that I noticed the males doing their dance more often. Almost non-stop. After about an hour I noticed that only one male was visible thru all the plants. Upon looking more closely at the tank I could now notice the male nudging at the female's side and then darting into the plants. This went on for what seemed like an hour or so before the female started to follow him into the plants. The only time this pair

would stop this action was for the male to chase the other males away. He never got overly aggressive to the other males or the female. This behavior started around 5:00 to 6:00pm in the evening. After the lights had been on for a few hours, it was when I was going to feed them that I first noticed it, so I did not feed them their second meal that day. The pair of fish continued this for several hours, before they stopped. Unfortunately at the time did not have a spare tank to move the adult fish into.

OK, so what I did next was to set-up four identical setups. Follow the above instructions, but this time in three of the tanks I placed a piece of plastic screen that I purchased at a local craft store. This screen looks like the material that is used in egg tumblers if you are familiar with that. I cut the screen to fit the length of the tanks, and left it long enough on the width to go from the plastic rim on one side to the other side to make a "U" shape. Under the screen I placed a couple of alder cones to not only protect the eggs from fungus, but to help keep the screen off of the bottom of the tank. I placed the four fish all into the one tank that did not have the screen placed on the bottom of the tank and conditioned them for about a week. After about a week, I placed the female and the most aggressive male into another tank. I fed them very lightly while in this tank once a day with a very good flake. I left the fish in this tank for two days and then moved them to the next setup. I repeated this until the pair was placed back into the tank with the other males. Once the pair was removed from one of the tanks, I covered the tank with a towel to keep out the light. Starting with the day I removed the pair, I started to add two turkey basters full of green water three times a day to the spawning tanks. On the second day, along with the green water I also put in 5 drops of Wardleys liquid fry food twice a day. Starting on the fifth day, I stopped the green water and replaced it with micro worms three times a day. By the seventh day, I stopped the liquid fry food, and replaced that with newly hatched brine shrimp. I continued to feed the fry these two foods until the fry could eat HBH first bites. To make sure all the fry were in fact eating, I fed the HBH powder and the baby brine for a couple of days. Remember, there is a lot of food going in there, so I would once a day pull out my trusted turkey baster, and take out anything sitting on the bottom of the tank. I always placed this water in a clean white bottom cup and let it sit for 30 minutes or so, just to make sure I didn't have any fry in with it.

I have found this little fish very rewarding and although some work is required, it was fun to try something new. I think sometimes us cichlid lovers take for granted the amount of time and care that the parents put in to assure the survival of their off spring.

From The Fish Room

By Ed Millinger

I first became aware of Pleco Caves at the Midwest Cichlid Association in Kansas City in September of 2009. They brought a huge inventory of products that they displayed for sale. Recently I realized my striped raphael catfish were outgrowing their hiding places so I went to pleco caves.com and found some large ceramic caves that would fit the bill. I ordered on Tuesday using paypal and my caves arrived on Friday. All of their ceramics are made in their backyard. They carry more than just pleco caves, they also sell fish food, driftwood, cichlid huts and even homemade jams and pickles! Check them out.

Have you ever looked at the club listings in the back of your favorite tropical fish magazine? I did and checked to see what days of the week other clubs meet. Saturday was number one with ten, Friday and Tuesday were mentioned nine times followed by Sunday and Thursday at six, Monday at five and Wednesday came in last at four. Did you know that we used to meet on Wednesdays?

If you have ever decided not to order black worms because you didn't want to keep them in the ice box you may be in luck. Black worms that go uneaten can live in a gravel bed. I have fish that hover around the gravel vac when performing water changes waiting for the worms to be pulled up from the substrate. I never put two and two together but obviously my tank water is warm and they survive in it. Derek Walker told me his brother Damon was over at Charles and Sue Harrisons and noticed that Charles was keeping his in an unheated tank. I have tried it and it works. I put a small amount in a bare ten gallon tank with a sponge filter. Charles advises to keep the ph around 7.5, make sure the water is churning with an airstone and he changes about half the water every three or four days. If you wanted to try this you could experiment with just a quarter pound to begin with. Charles also advises against letting them ball up as they may suffocate from the inside out.

The next time you begin packing for your fish collecting trip to Lake Malawi you may want to throw some Beano into your carryon luggage. Malawian President Bingu wa Mutharika's administration is proposing laws to criminalize passing gas to annoy others. If this passes you sure wouldn't want to run afoul of the law by also passing.

Remember it's a hobby not a job.

Snails, snails, snails.....

By Lisa Reel

Reprinted from the January/February 2011 Youngstown Aquarist of the Youngstown Area Tropical Fish Society

I am a natural kind of person, even my fish tanks are as close to nature as I can get them. Natural river rock, drift wood from the lake (but you did not read that here), I really love the real plant look in my tanks (I know, plastic is so much easier). I ventured into the horticulture program with my fish club (yatfs), not having much luck with my plants because of the dreaded SNAILS. My poor plants looked like Swiss cheese. I could not keep a hand on these little buggers, I even resorted to paying my 8 year old a penny per snail she catches (cheap child labor). Still no good....I can leave a bucket of gravel sit for 2 years, put it in a tank, add water and fish, and low and behold, over populating snails. Determined not to give up, I decided to start asking around the fish club. Finally at our annual fish show, I asked the big Kahuna, Ray Lucas. He told me about a chemical called "potassium permanganate". The purple wonder cure and my new best friend! Not easy stuff to get, I had to have it special ordered in at my local pharmacy, and they would only sell it to me in a big container, it has worked out to my favor. Introducing any chemical to your tank, you must be careful and do your re-search. I learned of it's components and what they do (in plain English, it is a high salt chemical, and what is a snails worst enemy, salt). It is safe for your fish if used in moderation, knowing myself like I do, I removed the fish to another tank. I added a couple tablespoons to my 60 gallon square plant tank infested with snails. It turned a pretty dark purple, I could not even see my plants (thank God I took my fish out). After 4 days the tank cleared up, I kept my filter running the whole time during this process. The fourth day, wow, no snails...oh yeah, oh yeah, its my birthday!! They were floating on top and lifeless on the bottom. Unfortunately, my tank smelled of death. I did drain all the water out, cleaned everything and added fresh water, but no snails. It was worth all the effort in my book! My plants started to look like nice plants again, beautiful green, solid leaves. I even turned them in for the Hort program with pride.

The Dirt On Soil-less Worm Culture

by Joe Reich

Reprinted from the August/September 2010 Tank Topics of the Greater Akron Aquarium Society

I guess it could be said that maybe I have a wet thumb. I've been able to breed many different species of fish and raise the fry successfully. However, in all my years of fish keeping never once did I feed them any White worms or Grindal worms. But after reading about and hearing of other hobbyist's feeding worms to their fish, and the success that they were having, I thought I'd buy a culture and join the "live food" club. The problem was, I just couldn't keep the culture going. This scenario played out on several occasions, but I just couldn't put my finger on what I was doing wrong. Too high a temperature? Too dry? Not enough food? Wrong culture medium? Who knows! So I gave up even trying to buy anymore cultures as I thought it a waste of money. But a couple of years ago, one of my favorite magazines had an article from a book excerpt that mentioned soil-less worm cultures. mmmm, this had my curiosity. I decided that once again I would try my hand at worm ranching.

The Materials

Obviously I had to come up with some type of culturing container. My container of choice ended up being the plastic food dish that Chinese food comes in. The price was right up my alley! Having several of those around, they were soon put to use. With my past history on worm culture I wasn't going to put a lot of money in this project. I melted little holes into the lids of the food dishes so the culture can breath using a sewing needle heated over a flame. The article stated that scouring pads were used as the "culture medium". I just happened to have some Scotch Bright pads around, and they didn't have any soap impregnated into them. I used scissors to cut the scouring pads to fit inside the container so they lay nice and flat. You'll need 3 layers. The third part of the set up was needle point canvas. I found some at the local Ace Hardware for 17 cents a sheet. One sheet will cut into 3 pieces needed for the culture. I tied a small length of fishing line to the bottom layer of canvas for ease of removal. At the next fish auction I managed to buy a Grindal worm culture for a dollar. What a bargain! It turned out not to be such a bargain at all. First of all, in going through the entire culture all I found was 11 worms! To top it off they weren't even Grindal worms! So it was, I had 11 white worms to populate my culture with. I consoled myself with the thought that it was only a buck. I was in this experiment on the cheap!

Setting It Up

First, rinse off the scouring pads and needle point canvas in hot water to get rid of any manufacturing byproducts. I can't speak about the scouring pad, but at the plastic factory where I work we sometimes use mold release on our plastic parts. Next, place the bottom layer of the scouring pad into the container. Fill the container with enough cold water to cover over the first layer entirely. Then add the next two layers of scouring pad. Place the three pieces of needle point canvas on top of the scouring pad. I moistened a single pellet of dry cat food and placed it on top of the needle point canvas. To all these fine furnishings I added all 11 worms. I considered giving them names at this point, but heck, I'm bad at remembering names to begin with.

The Point Where Failure Is Imminent

So now that the culture is started the fun begins. White worms like to be kept on the cool side, say around 60 degrees Fahrenheit or so. I've been keeping mine at 63°F. Grindals, from what I understand,

can go to higher temperatures. Every third day I fed the worms a pellet of cat food and at one point I almost gave up. It just didn't seem like I was feeding anything. I was removing almost as much of that pellet on the second or third day as I was putting in. But after a couple of months I noticed that the population was actually growing. It got to the point where I wasn't removing anything, just adding. That single pellet of cat food turned into two, after another month three. Periodically I would add more water to keep the bottom layer of scouring pad under water. After I had the culture going for about six months I decided to start making another culture as a back up. If I could do one culture, surely I could do two! It was at that point that the first culture was going through six pellets every other day. Things kind of snowballed from there. It didn't take long for it to go through eight pellets of cat food EVERY day. Tons and tons of worms! At one point I wondered how all that biomass survived in such conditions. I thought that it was time to start harvesting. But I had a rude, and I mean very rude, awakening before I could harvest any worms! I opened it up one day and it smelled very foul, and not a worm found alive! I rinsed everything off as best as I could and set the culture aside. Every few days I would look in to check for survivors, but nothing lived. I had just learned another lesson, don't feed them to death. The second culture I had started was doing okay at this point, but still too low in population to harvest anything. With only one culture left going it was time to start a third culture as a back up. Here we go again! I reflected on my mistakes, too much food, too many worms, the odor that started to catch my nose a week earlier that I didn't address. Yep, it all added up! I had to find out if I was doing anything else wrong, so I dug up that issue from the previous year and started to reread. One of the things that caught my eye was that the culture water needed changing about every month! Oops! I guess I kinda missed that. It wasn't a week later that culture number two started to give a bit of an odor. It's population was nearing the harvest size and worms were starting to crawl up and onto the lid. I would rinse the lid in one of my aquariums to get rid of the worms and put the lid back on. But I noticed something funny about doing that. Seems the worms liked the water that was coating the inside of the lid. They were actually migrating or at least trying to. The inside of the lid was about 50% covered in worms! I had to investigate. I pulled the culture medium out and gave it look over. Seems the bottom layer was pretty foul, and the top and mid layer weren't much better, only less wet. I decided to rinse the scouring pads, but how? I got a big enough container to fit the culture medium in and filled it with aquarium water. I swished each piece of culture layer back and forth and lifted it out to dip dry, more or less. I put the culture medium back in place, and I covered the bottom layer with aquarium water. I added food as normal and everything turned out fine and dandy! No more odors, I was very happy, the worms were very happy (at least I suspect) and it looked like they were thriving once again. This got me to thinking about culture number three, maybe I should change the water in it too? I did so and was surprised to find how polluted it was. Clearly I had to put culture water changes on my maintenance list.

Harvesting!

The top three layers of needle point cloth were meant to be used as a way for harvesting the worms. Just rinse them into a container with aquarium water. And don't forget to collect the worms when rinsing the scouring pads! It seems that they sink to the bottom and ball up just the way black worms do. While you might be tempted to just fish them out with a brine shrimp net, I implore you not too! The water is filthy! You'll see what I mean! Just pour out the bad water, keeping the worms at the bottom and refill with more aquarium water. Pour out the water again and repeat the process until it looks reasonably clean. Then just pour them into a brine shrimp net.

Pests

It seems that somehow a couple of my cultures had become infested with some kind of mite. I don't know where they came from or how they got in there, but they are there. I don't know if they are actually

feeding on the worms but they do seem to collect around the pellets of cat food. And I notice that the worms seem to avoid those pellets. The article in the magazine made no mention of mites, so I was kind of up in the air about what to do about them. Also last summer, somehow one of the cultures I tried to start had some small type of fly get trapped in with the worms. Obviously it was a female laying eggs because when I opened it up, there were maggots eating the cat food pellets. All the worms in that culture died when the maggots showed up. The best way I've found for controlling both these pests is the water rinse. In fact, since I started to rinse the cultures periodically, I haven't found a single mite!

Subculturing

Subculturing is super, super easy! Just take any one of the top two layers of scouring pad, give it the old rinse treatment and put it in a new culture container! There's still plenty of worms left in the scouring pad for a starter.

Grindals

This last fall I finally managed to get a Grindal worm culture. I must say, for a smaller worm they sure have huge appetites! They also seem to reproduce quicker. I'm still experimenting with them, but they seem well on their way to success too.

Conclusion

I've found raising worms soil-less to be an easy way for harvesting them. I've also learned that you might have to let your nose tell you when to change the water and not just rely on a monthly changing regime. It's also a good way of keeping mites in check since every time you harvest or change the water, the mites get washed away too! Ironically, the Grindal starter culture that I purchased is even showing signs of population growth! But in comparing the soil culture with the soil-less, the soil-less culture is outgrowing the original. So it may actually be a better way to raise worms. Learn from my experiences and give this a try! It seems too easy to mess up!

Marble Crayfish now Banned in Missouri

By Mike Hellweg

As many of you who regularly attend the meeting have heard, the marble crayfish, aka Marmorkreb or *Procambrus marmorkreb*, is now illegal to possess, transport, buy, sell, import or export in Missouri. It has been published in the new 2011 Wildlife Code in section “3 CSR 10-4.117 *Prohibited Species*”.

They have been a popular live food item in the hobby, and made interesting aquarium residents in their own right. They are parthenogenic, meaning that they reproduce without a mate and produce clones of themselves. This interesting method of reproduction, plus their fecundity, means that if even one of them were to get into a natural body of water it could quickly create an established and potentially invasive population.

It is up to us to be responsible hobbyists and comply with the law. If you still have any left, make sure you feed them to something or put them into the freezer. You can't give them away, sell them or pass them on to anyone in another state where they are still legal now that the ban is in place. The only option you have is to destroy them humanely on your premises.

PVC Devices Helpful for Breeding Fish

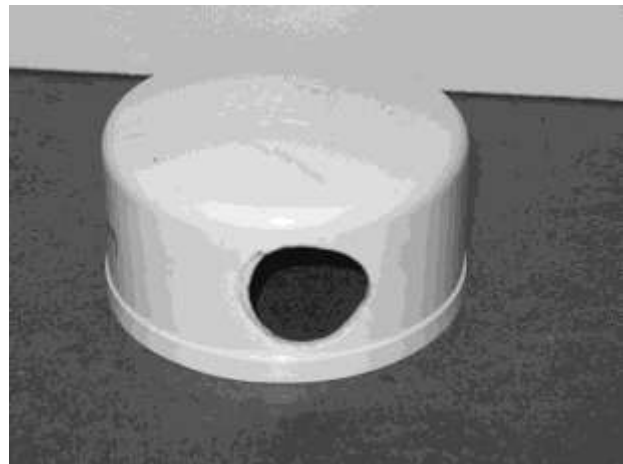
By Mike Hellweg

Many hobbyists have discovered, either through other hobbyists or on their own, the many uses of PVC in the Fishroom. PVC is great because it is light, can be moved, cleaned and sterilized easily, requires no special tools, and it is easy to work with. In addition to many tank cleaning devices and water change systems, it is also useful in the tank for breeding many types of fishes. Here are a couple of uses that I find handy for breeding fishes:

All can be made out of Schedule 40 or Schedule 80 PVC.

Breeding Caves:

3" or 4" PVC endcaps can be drilled with a half-inch to one-inch hole in their sidewall. This is then used with the solid end up and the open end down to form a perfect cave for cave spawning Apistos, West African Cichlids, Badids, Ancistrus "Plecos" and cave spawning Anabantoids. Simple flat plastic caps, also available from the hardware store, can be glued to the bottom so the cave and brooding fish can be moved from tank to tank.



A simple tube cave made of a 4 – 6" length of PVC pipe with a cap on one end makes a great spawning cave for some other Gobies, the Black Darter Tetra, *Poeciliocharax weitzmani*, and some Loricariids. The diameter of the pipe should be close to the adult size of the fish. The "cave" can be removed from the tank to a "brooding" tank with the guarding parent and the eggs by simply covering the open end and moving the pipe - water, fish, eggs, and all to the "brooding" tank. The eggs can be artificially hatched by removing the end cap and attaching the pipe with eggs vertically to the glass with a suction cup heater holder. A small piece of rigid airline tubing is wedged up next to the pipe where a gentle flow of bubbles keeps the water circulating NEAR but NOT OVER the eggs.



Artificial Snail Shells:

Half inch or three-quarter inch PVC elbows, with a one-inch length of pipe inserted in either end. Place a cap on one end and leave the other end open. Many Tanganyikan Shell Dwellers and some shell spawning Gobies will accept this unit as a substitute for a snail shell. Gauge the size of the pipe to the size of the fish. One big advantage over shells is when trying to catch the fish – the PVC "shells" can be removed from the tank, the endcap removed, and the fish poured into a container.

Fish “Condo”:

A “pile of pipes” made of 15 – 20 (or more!) pieces of half-inch, three-quarter inch and one inch or larger pipes, each 4 to 6” long, all glued side to side and with their front ends staggered forward and backward.

This unit makes a nice “condo” for many Gobies, many Catfish, some Tanganyikan rock dwellers, and other cave and rock dwelling fish.



Breeding Grid:

A breeding grid can be made from an oval loop of 4 lengths of PVC and 4 elbows. Drill a few holes in the oval so that water can enter and air escape when you put the device into a spawning tank. A mesh of eighth inch to quarter inch netting material or even plastic needlepoint canvas can be cut to fit over the top of the oval and is attached with either fishing line or plastic cable ties. The grid is laid on the bottom of the tank with the mesh side up. Eggs laid over the mesh will fall through and be safe from the adults. After spawning, the adults and the grid are removed and the eggs are left to hatch.

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***Cultured blackworms are blackworms that are grown under completely controlled conditions. They are grown using clean, cold water and are fed a special ground grain feed which contains no animal products or any waste products. They are not raised in conjunction with any fish or other animals. The worms are free of parasites and pathogens (disease causing) bacteria. As an extra precaution, all worms are quarantined for 7-10 days after harvesting to assure best quality and packaged in bags with pure oxygen to reduce any shipping stress.

**Please call or email with zip code for prices and shipping quotes.*

HAP Report January – February 2011

Mike Hellweg

Member	Species	Common	Rep	Pts	Total
Andy Walker	Hydrostemma longifolium	Barclaya	IB	20	495
Andy Walker	Hygrophila balsamica		V	15	510
James H. Miller	Ceratopteris pteroides	Spongeleaf Water Sprite	V	5	225
James H. Miller	Nymphaea lotus lotus		V	20	245
James H. Miller	Nymphaea lotus pubescens*		V	20	265
Mike Hellweg	Anubias sp. Mutengene	Mutengene African Sword	IB	20	3050
Derek Walker	Caulerpa prolifera		V	10	2990
Jerry Jost	Cryptocoryne affinis haerteliana		V	15	1630

Reproduction Key: V = Vegetative, OB = Outdoor Bloom, IB = Indoor Bloom, S = Seedling

* = MASI First

Member Classifieds

Turn your old Lionel and American Flyer trains into fish money. Call Marcus Daly 962-5260 or call Kathy Daly.

I have bloodworms and brine shrimp. Brine Shrimp eggs \$32 for 16 oz. can. I am looking for a 200 gallon tank. Jim Miller, 314-638-1134.

Charles Harrison (314) 894-9761, csharrison@inkmaker.net -

- Thiosulfate crystals (Chlorine Remover) \$3.00 a half pound
- OTO double strength Chlorine/Chloroamine test kits - 4 ounce - \$12.50
- Flubendazole, 5% powder 10 grams \$5.00, 25 grams - \$20.00
- Lavamisole HCl Powder - 5 grams treats 100 gallons \$10.00
- Methylene Blue 5% solution (2 ounces) \$12.75
- Acriflavine Concentrate (4%) solution, 2 ounces \$12.70
- Bromthymol Blue pH test solution, 4 ounces\$7

Wanted: Small Styro shipping boxes - 12 x 12 x 12 or a little bit smaller. If your company uses them and throws them away, save them! Bring to the meeting or I'll come pick them up. Mike 636-240-2443

MASI Members can place a classified ad in the Darter for free. Ads may be up to 30 words in length. Send your ads to the editor. The ad will run for one issue unless you specify how long to run it, in which case it will run as requested.

FISHES as DISHES

Patrick A. Tosie, Sr.

We all love our fish! This column will be dedicated to using our fish for something tasty to enjoy. Try it, you may like it. If you have leftovers, bring it to a monthly meeting for others to enjoy.

Zesty Lime Fish Tacos

Ingredients:

1 lb tilapia fillets (about 4)
½ cup fresh lime juice (2 to 3 limes)
3 cloves garlic, finely chopped
¼ cup Pillsbury BEST® All Purpose Flour
¼ cup yellow cornmeal
1 can (16.3 oz) Pillsbury® Grands!® Homestyle refrigerated butterm
6 tablespoons Crisco® Pure Canola Oil
1 ½ tablespoons chipotle chiles in adobo sauce (from 7-oz can), fine
½ teaspoon salt
¼ teaspoon pepper
½ cup salsa
½ cup sour cream
1 ½ cups shredded cabbage

EAT MORE



FISH

Directions:

Heat oven to 200°F. Cut each fish fillet lengthwise into 4 strips. In shallow glass dish, mix 7 tablespoons of the lime juice and garlic. Add fish; turn to coat. Let stand while preparing biscuits.

On work surface, mix flour and cornmeal. Separate dough into 8 biscuits. Press both sides of each biscuit into flour mixture, then press or roll into 6- to 7-inch round.

In 12-inch nonstick skillet, heat 1 1/2 tablespoons of the oil over medium heat. Add 2 biscuit rounds; cook about 1 minute on each side or until golden brown and cooked through. Place on cookie sheet; keep warm in oven. Cook remaining rounds, adding 1 1/2 tablespoons oil to skillet for each batch. Wipe skillet clean.

Heat same skillet over medium-high heat. Add fish and lime juice mixture, chiles, salt and pepper; cook about 5 minutes, turning fish once, until fish flakes easily with fork.

In small bowl, mix salsa, sour cream and remaining 1 tablespoon lime juice. Using slotted spoon, remove fish and divide evenly among biscuit rounds. Top each with cabbage and 1 to 2 tablespoons salsa mixture. Fold biscuit rounds in half over filling. Serve with any remaining salsa mixture. Garnish with lime wedges, if desired.

The Computer Page

Steve Deutsch

MASI's official web page: www.missouriaquariumsociety.com

MASI's email group: MASIFishHeads Yahoo Group - see web site for joining instructions

Addresses are only printed with permission of the owner. If you would yours added, please email me at steve@skdeu.com. If you would like yours removed, or if it needs correction, also please email me.

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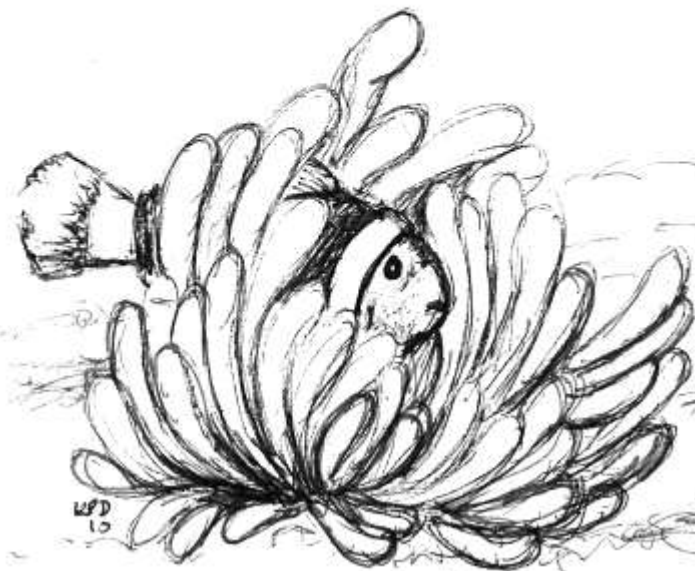
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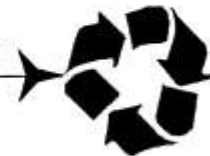
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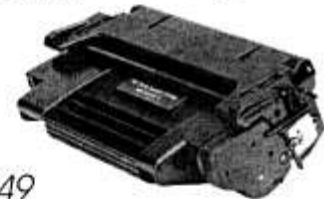
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