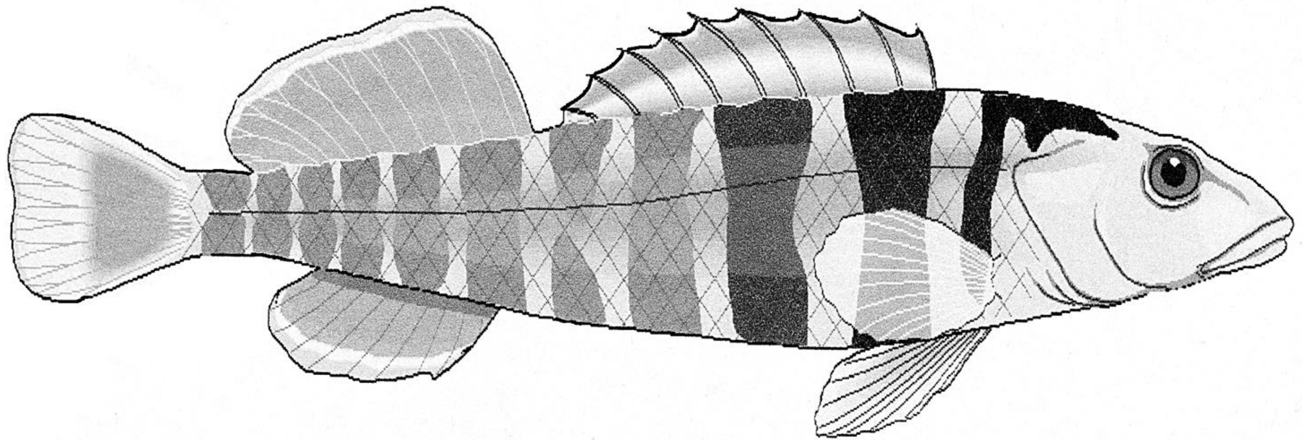
The Darter

May - June 2013



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St. Louis, Missouri

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

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

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Places to Be / Things to See

SATURDAY June 1, 2013
Executive Council
Hosted by Cory Koch

THURSDAY June 20, 2013
General Meeting, 7:30 PM @ Dorsett Village Baptist Church

SATURDAY June 29, 2013
Executive Council
After the picnic at the Jokerst's

THURSDAY July 18, 2013
General Meeting, 7:30 PM @ Dorsett Village Baptist Church

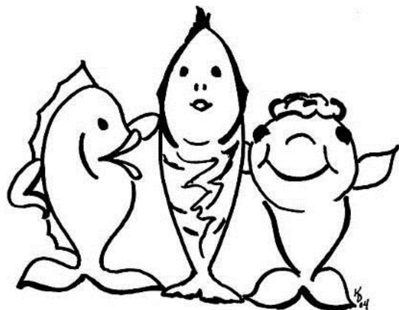
SUNDAY August 11, 2013
MASI Summer Auction
Crowne Plaza Hotel

THURSDAY August 15, 2013
General Meeting, 7:30 PM @ Dorsett Village Baptist Church

THURSDAY September 19, 2013
General Meeting, 7:30 PM @ Dorsett Village Baptist Church

SATURDAY October 5, 2013
Swap Meet
Crowne Plaza Hotel

Membership



Yearly membership in the Missouri Aquarium Society, Inc. is $20 per calendar year for members receiving a paper copy of the Darter. Starting in 2013, it will only be $15 for members electing to receive the Darter electronically. 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.

Faowi Wowee
Exploring for Rainbowfish in Papua
By Gary Lange

I've almost always been a rainbowfish keeper now to the point of it being an obsession. A few years ago a missionary from Papua (formerly Irian Jaya the western half of the island of New Guinea) came through St. Louis recruiting pilots for his group. He also was an avid fish explorer and checked out almost every stream that he could while he was there. He actually has a rainbowfish named for him, Glossolepis dorityi. He could identify some of the rainbowfish but others he really wondered what they were. I told him I envied him and wished that I could do that too. Well early in 2005 Dan asked if I would like to come to Papua and look at some rainbowfish. We quickly made plans for a two week visit. Talk about died and gone to heaven! Wowee! To actually be able to see my favorite fish in the wild, this was a dream come true!

One of the places that we explored was a little village in the Mamberamo river drainage called Faowi. Faowi was about an hour and a half by plane or about a 4 month walk from Sentani, our home base. It was an easy choice to fly. There were a total of five of us going on this adventure so there would be plenty of hands to haul the seine and also take pictures.
Dan arranged for us to fly out in a really nice plane, a Pilatus, that seats 8 including the pilot. We were supposed to fly out first thing in the morning around 8 am and we were at the airport bright and early only to be told that we would not be able to fly out until 1 pm. So after weighing up all of the equipment we just went back to Dan's house and waited. Such is "Papua time". Still such a long wait time for a scheduled flight was a puzzle to him. When it was finally time to go the pilot asked if I would like to fly out with the doors open or closed. I'm not sure if they were trying to pull one over on the tenderfoot but I insisted that the door should be closed! This was the first time I was ever in such a small plane and the first time I had ever landed on a grass runway. Buzz the field once to chase off the dogs, children and chickens, then land. It was quite exciting.

When we arrived we found out that one of the villagers had died and many of them would be in mourning for their dead relative. Actually we were bumped from our early flight so that they could fly the body from Sentani to Faowi. Ok, that might not mean a lot to a Western outsider, but for us it meant that it would be very difficult to find the right people to help us. We went searching for a fellow with a boat and motor that could take us downstream to a spot where we could walk to the lakes that Dan and his friend Eric knew about. Instead we found that he was off bringing in other relatives and mourners to the funeral. Instead of waiting for his return we decided to investigate even a smaller lake that was very close to the airstrip. We had estimated that it was less than ½ of a mile from the runway. There were a couple of fellows that were not relatives of the dead villager and they offered to lead us to the lake. So they collected their Parangs (machetes) , we grabbed our seines, buckets and cameras and off we went. Ok, so that should have been the Fab five and the 2 guides right? Well we also ended up with several other people that also were not in mourning including about a half dozen kids. I guess they wanted to watch the silly white guys drown in the swamp. The first part of the trek was easy, just a slightly muddy forest trail. Then it got much wetter as we got into small saplings and reedy plants. It was fun to watch the guy in front of you all of sudden go into the mud up to his knees! Ok, don't step there, then it was my turn to find a good hole. Eventually we got to an area where there was just Sawgrass, which by the way, is very sharp. The mud was now gone but now when we sank into the swamp we often went up to the tops of our thighs! Grab some sharp Sawgrass and pull yourself out. What we were really doing

now was walking on a floating island of vegetation. Would we ever find the little lake? Some of the young boys climbed the saplings and exclaimed that the lake was close by, or at least that's what was translated to me. Ten minutes later and about an hour total trek we reached our destination. Where we were standing at the edge of the lake was about a foot of water in amongst the reeds. It was a small lake, only about 150 foot in length and perhaps at the widest, 30 foot wide. The visibility was only about 2 feet but we could see some bright red rainbows in the water. Quickly we forgot about our tired muscles and decided how we would attack the lake. The lake was fairly deep so we decided to throw out the tallest, Eric to pull the seine around a small section of the lake. The people on shore would then grab the net and pull it up. Wow, we caught one of the brightest red Glossolepis multisquamata that I had ever seen! The anal fins on all of them were quite long and very ragged but it was obvious that this was not due to injury. The males all had bright red eyes. With much effort we were able to catch about 20 of them. We then slogged our way out of the swamp and back to firm ground and the village.

Since we couldn't get our boat ride out of town to the crater lakes we had to stay in the village for the night. We also had to endure the noise of the mourners. There might be something to letting it all out for the death of a relative and his relatives certainly did that. The wailing and noise was deafening and would go on throughout the night. I decided to put in earplugs and try and get some sleep. The earplugs helped but didn't eliminate all of the noise. I was still so tired that I fell asleep. Most everyone else had trouble sleeping so I got a lot of flak as being the only one that was able to sleep thru a funeral!

The next day they were supposed to take us to the lakes. After about half an hour on the big river we realized that he had taken us past the lakes in the hills. We asked what was going on and he replied that there were crocs in the lake and they were afraid. Later we found out that what was really happening was that he wanted to attend the funeral and didn't think we'd get back in time if we went into the hills. Instead we went into a slow moving river that eventually became a creek. Although we didn't find our lakes we did find some really nice Chilatherina fasciata and some nice plants to boot. There was java fern all over the banks of the river so they stopped to collect some for their aquariums back in Sentani.

Later in the afternoon we seined in the clear water creek that flowed right next to the village. It was only about 60 foot wide and at the most 6 foot deep where we explored. Again, we only found one rainbowfish, Chilatherina fasciata. They were essentially identical to the fasciata that we traveled so far down river to catch. We followed the clear stream for about a mile up into a beautiful boulder field. It was a great place to enjoy the world for a bit and then jump back into the refreshing cool water. It's funny how my brain has forgotten the parts about just how hot and humid it was. You could dry off and then in no time be soaked all over again! At the time I had to keep telling myself to push past the miserable part and concentrate on the fact that I was in rainbowfish heaven, collecting my very own rainbowfish! We were hoping to also find some Melanotaenia vanheurni in the faster flowing waters but we could only find the C. fasciata. It looked like we were skunked on our quest for finding vanheurni.

On the way back we decided to catch some rainbows from a very small clear running stream where we had seen some smaller rainbowfish. The stream was really less than 3 feet wide in most places and maybe a foot deep in the largest pools. We dipped a few out and thought that they were Melanotaenia affinis, however very beautiful affinis and worthy of collecting. What was interesting was that the guides told us that this tiny stream drained into our swamp where we found the multisquamata. However, we didn't find any of these in our little swamp-lake. These fish were much more difficult to collect than we thought so it took quite a bit of effort, even to collect a dozen fish.

Pilatus plane - our taxi to Faowi

Flying over Lake Sentani

Mamberamo River and Flood Plain

My “Red Dragons” – Glossolepis multisquamata

Boulder Field in Faowi Village Creek

Chilatherina fasciata – Faowi Village

Melanotaenia vanheurni – Faowi Village

Village Kids Say Goodbye

When we got back to Sentani and put them in the aquarium, our more experienced rainbowfish expert, David Price suggested that our M. affinis was really the M. vanheurni that we had been looking for all along! Although it didn't exactly look like the picture I had seen of vanheurni I learned a valuable lesson. The type fish that we sometimes make their way into the hobby are not the only color varieties that might be available. I was aware of this already because I had seen three different types of Melanotaenia affinis while I've been keeping rainbowfish, which is why I was willing to accept this fish as an affinis. Rainbowfish enthusiasts that keep Melanotaenia trifasciata know that they come in a multitude of colors and that they had better keep them straight and not cross them. Here in this village we had found three different species of rainbowfish and all of them looked very different than most of the pictures that have been published. In the rainbowfish world, as far as the island of New Guinea goes, we still have a lot to do in identifying the fish and their color varieties.

In our search for rainbowfish we found three different species of rainbows within a half mile radius of each other and every one inhabited a very different niche in their jungle habitat. Since that first wonderful trip to New Guinea I've made three more trips, discovering many brand new species of rainbowfish and bringing back some that we had only seen in the books. On some of these trips we've traveled through swamps suffering leech and mosquito attacks and spent long hours on boat rides to feed our obsession. But my day dreams always lead back to my first trip, Faowi – Wowee – Heaven for Rainbowfish.

Decapsulating Brine Shrimp Eggs

By Gary Lange

I tell everyone that I always learn something new when I go out and give a talk and my recent trip to Cincinnati was no different. I had just finished giving a short talk on digital fish photography and then we did a hands on workshop in Phil Benes fishroom. Phil was now going to give a demonstration on how he very handily decapsulates brine shrimp eggs. Below is my interpretation along with a few photos I took to describe the event.

Why decapsulate? – There are some fish that will eat the unhatched cysts or shells if you get them into your aquarium. Some will get them stuck in their digestive tract and will die as a result. Phil reminded me that youngish (1-1.5 inch) rainbowfish also are prone to this habit. This almost certainly happens to killifish too and I'm always trying to impress that on my killifish friend (initials JH) who seems to add more brine shrimp shells to his tanks than hatched nauplii. Siphon the orange stuff, not the brown stuff!! Taking photos of his tanks convinced me this might be true but that's a whole other story :-). I'm pretty anal about the way I feed live BBS to my rainbowfish fry by only siphoning off nauplii with a small airline tubing and then letting them settle again in a fresh water solution to remove any shells/unhatched cysts that I managed to pull along. That for the most part keeps my baby bows safe but it's a lot of time and effort. Sometimes that second "sludge of brine shrimp nauplii and eggs that are left at the bottom of my siphoning efforts I toss into my "tetras only" planted tank. I do occasionally end up with some tetras that are fairly bloated and eventually die. I hadn't given it a whole lot of thought but most likely I've been killing them with the egg shells that they've accidently eaten. If you remove the shells (decapsulate) then you don't have to worry about your fish getting impacted. Also any of the decapsulated cysts that don't hatch can still be fed so you don't have to do that slow and extensive

separation that I do to separate the unhatched eggs from the nauplii. You just dump the entire contents of the hatcher thru the brine shrimp net, rinse and feed. It usually takes me about 15 minutes every day times 2 hatchers to remove the hatched nauplii from the unhatched cysts & shells so that's 14 hours every four weeks that I spend/waste on separation. Decapsulation of the eggs really only takes about a half hour, plus a little bit of prep work up front. So if I decapsulate, in theory I'll have an extra 13.5 hours/month to spend on something else like cleaning tanks, drinking beer, you get the picture.

It's also been suggested that they hatch a bit quicker (16 hr @ 80 degrees) once they are decapsulated. It's also been suggested that perhaps a higher hatch rate is obtained especially for the lower grades of brine shrimp like the 75% or below grades. If you use those grades many of us have found that you often have to let them incubate a bit longer or pull from them twice (incubate a second time for another 8 hr or so) to get all of the possible nauplii. It's SO much easier just to hatch it all in 18 hours and then make up the next batch.

Perhaps you've read some of the recipes on-line for how to decapsulate eggs. I've tried it and although I removed the shells the eggs never hatched for me. I'm pretty sure that means I let them go too long. Phil, being a chemist took some of the guesswork out of the chemical reactions, added a bit of common sense and made things a bit more predictable.

Problems Encountered by Me When Decapsulating in the Past – If you use straight bleach the pH of your solution continues to go down as the reaction proceeds. I've used bicarbonate (baking soda) before but Phil (and Brine Shrimp Direct) both suggest using sodium hydroxide (NaOH). BS direct say to make a 1 Normal solution (39 grams/1 liter water- that's 2 TLB + 1 TSP if you are using NaOH/drain opener ground like coarse table salt). The no frills drain openers are pure NaOH, so you can find it at the hardware store. Phil was more of the mindset to just make up a very strong solution of NaOH (50%) and then use just add a little (1.5 TLB/22 CC) of this concentrated solution to the bleach for the reaction mixture.
You can make a 50% NaOH solution by adding 3 tablespoons of lye (drain opener) and adding water to a total of 100 ml. Be very careful as this is very caustic and will burn you bad if you get it on yourself. This is a heat generating procedure, it's exothermic, so start with cold water.
Although BS direct suggest 2 parts bleach to 1 part 1 N NaOH Phil's reaction was just ~ ½-3/4 gallon of bleach with 1.5 tablespoons of 50% NaOH.

The tricks to decapsulating cysts are: 1) to keep the mixture from getting too warm and 2) deciding when enough is enough. If you go too long you destroy the egg and it won't hatch. When the bleach starts working the reaction becomes exothermic, that is it gives off heat, quite a lot actually. You have to start adding ice cubes and then that cools the reaction, but it also dilutes the bleach and the reaction. You're doing this all the time you are stirring and trying to decide whether the reaction has gone long enough. You can see that the egg solution goes from a sort of brown, and then perhaps a white/gray to then an orange brown color. You want the shell gone but you really don't want to go so far as to keep the eggs from hatching.

For the demonstration Brantley Berry (Pleco Caves, www.Plecocaves.com) brought a half can (1/2 lb, 8 ounces) of cysts as our sacrificial lamb. At about $45+/pound now for eggs he had a lot of trust that Phil knew what he was doing!

Make sure you think of safety first. Wear your glasses, or better safety glasses as bleach will burn your eyes and so will sodium hydroxide. If you use muriatic acid to neutralize the bleach that will also cause you severe problems if you get it in your eyes. Wear disposable gloves to avoid getting these solutions

on your hands. If you get any splashes on your arms or elsewhere wash it off with water. Get the pets/kids out of the area because this would also be harmful to them if they got any on them and you don't need the distraction while you are doing this.

1) Soak the eggs for about 90 minutes in fresh water ~ 3 quarts in a plastic wide mouth clear container. Bubble to keep the eggs moving and to ensure they all get hydrated.

2) Remove the water. Phil's trick – buy the 150 mesh bag from Brine shrimp direct for $6.95 http://www.brineshrimpdirect.com/c9/Mesh-Bag-c65.html. If you don't you'll have a lot of problems dealing with removing the water from this amount of brine shrimp eggs.

3) Dump the eggs into a wide mouth clear plastic container (~1 gallon size), getting as many of the cysts out of the bag as possible. Then put COLD bleach over the mesh bag to remove the rest of the eggs from the bag and into the reaction container. Put the bleach bottle in the refrigerator overnight to get it good and cold. Yes this is another of Phil's tricks that makes this reaction easier. Instead of trying to add ice to the reaction diluting the bleach and moving your attention elsewhere you can spend all of your time watching and stirring the reaction. Once the bag is egg free put it aside, you'll need it later on. Phil then added his cap or ~ 1.5 tablespoons of 50% NaOH to this mixture and then started stirring the eggs. Note that with the BS direct method you add about 1 liter of 1N NaOH solution to 2 liters of bleach so this method is a more dilute solution of bleach. Then use a plastic spatula to stir the mixture, making sure that all of the eggs are in solution and reacting. Phil used a plastic "rubber policeman" from his lab but you can substitute a thin, long handled plastic spatula to perform the same trick. A 10-12 inch long handle model will help you get to the bottom of your container. By the way as a side note, use fresh, unopened bleach, with no fragrances added. Opened bleach containers lose their chlorine and can make the reaction go poorly or not at all. I know this by personal experience unfortunately.

4) This reaction only takes about five minutes so you won't be stirring for long. Phil used the spatula to pull up some cysts and smear them to the side of the clear container. You could see them going from brown to a sort of orange brown. I don't remember really seeing a white/grey stage that you hear so many people talking about on the internet. I also didn't really see much white foam on the surface that you usually see on internet photos and also when I did this myself with room temperature bleach while trying to keep the reaction cool by adding ice. I think the reaction, because it was cooler and stayed cooler because of the refrigerated bleach went slower and more evenly. The next time I try this I will save just a bit of the eggs before adding the bleach so that I will be able to make a good comparison between the raw and finished product. When I actually did this reaction myself I found that I stopped the digest too soon. I took some of what I thought were completed orange eggs and photographed them next to the starting material. When zooming in it was clear that some 15+% still had shells. Fortunately these were dead eggs so it was a good practice. I repeated the digest the next day and this time before stopping the reaction I looked at the magnified photo to make sure that it went to completion.

5) Now that they've changed color it's time to stop the reaction by removing the chlorine. Dump the mixture (carefully, remember it's bleach and sodium hydroxide) through the mesh bag in the sink to separate the reaction mixture from the cysts. Continue washing with cold water, flushing it down the sink for several minutes. This would be a good time to turn on the kitchen exhaust fan to get rid of that chlorine smell. In the next step when you add an acid this will also release some chlorine gas so it's good to remove this fairly quickly.

6) To remove/neutralize the chlorine completely Phil added some 0.1N Hydrochloric acid (HCl) to the reaction container and dunked the mesh bag up and down. You can find this at the hardware store labeled “muriatic acid”. You dilute this 1:100 and you have about a .1N solution. Remember always add the acid to the water not the other way around to prevent the acid from “spitting” back at you. You can also just use white vinegar to help remove the excess chlorine or even dechlor (sodium thiosulfate) if you would rather avoid the muriatic acid. It takes a bit of dechlor though so HCl or vinegar is a quicker option.

7) After the chlorine neutralization step or acid dunk wash the eggs again in cold water. Squeeze the mesh bag gently to remove most of the water. Keep washing until you no longer smell any chlorine.

8) At this point Phil puts a big funnel over a 1 liter narrow mouth plastic bottle. The eggs are pretty thick at this point so it’s sort of like shoving clay thru the funnel. Previously he had made up a saturated solution of salt that he had put in the refrigerator. This solution is so saturated that you will even see crystals of salt falling out and crystalizing on the bottom. You can make this solution by adding salt to hot water and shaking until no more salt will dissolve. If you have to be exact that is more like 300 parts per thousand (300 grams of salt per liter) but “shake & look” is easier. Use this cold brine solution to get the eggs into the bottle. A turkey baster will help in the process to deliver the brine solution to the funnel. Phil says he likes that type of bottle because the cap delivers just about the right amount of cleaned cysts for his hatcher. I think that’s about 1.5 tablespoons (22.5 CC) of solution and eggs when I measured the cap of my own 1 liter lab bottle. Most websites including BS direct say to drain off the brine after 24 hours and replace it with fresh brine. During that first 24 hours the eggs are dehydrated somewhat pulling a lot of water out of them and diluting the original brine. Phil never bothers with this step and hasn’t had a problem with leaving the original brine on the eggs. BS Direct says they will last about a month in the fridge. Phil suggested that this was good for about two months. So depending on your egg usage, scale the reaction accordingly. Store these eggs in the refrigerator.

I have almost a pound of cysts that I know are no good that I will practice on first. I don’t expect decapsulating these will make them hatch but it will give me a few chances to practice and gain a bit of confidence. Seeing someone go through the process is also a lot more informative than someone just telling you about it. Hopefully I’ve given you enough confidence to try it out at least with a small batch and see if you can get it right too. It is expected that brine shimp egg prices will start dropping at the end of spring so when I get in a new batch of viable eggs I will start trying in earnest. For my fishroom I use two ½ tablespoons of cysts per two hatching containers a day. That comes out weight wise to about 2 ounces of eggs per week or 8 ounces, (1/2 can) per month.

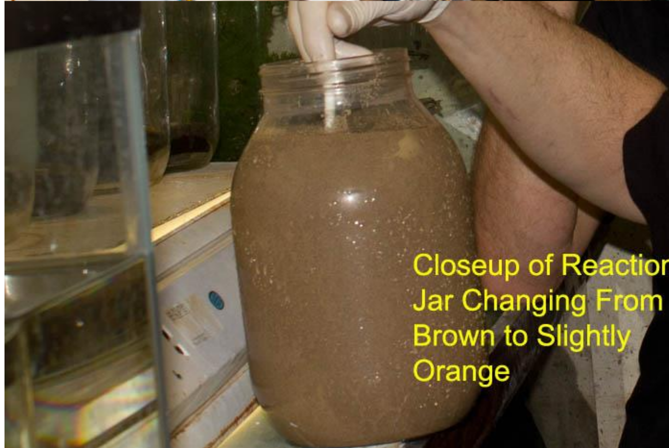
Brantley’s decapsulated cysts hatched like champs and he’s very happy with his product. He plans to do this himself when he finishes with the eggs he got from Phil. Enjoy!

Phil's Mesh
Bag From Brine
Shrimp Direct

Remove the
Water from
the Hydrated
Eggs

Add ICE COLD
Bleach and a
DASH of 50%
Sodium Hydroxide

Stir Reaction Watch
For Color Change
About 5 Minutes


Closeup of Reaction
Jar Changing From
Brown to Slightly
Orange

Removing
the Chlorine

Rinse Chlorine with
Water and Neutralize
with .1N HCl or
Dechlor Rinse with
Water. Squeeze
Out excess Water

Put Decapped Eggs
Into Container
With Cold Brine
Solution for
Storage

BAP Report

Steve Edie

Member	Species	Common	Pts	Total
Feb 2013				
Jack Heller	*Corydoras pygmaeus*	Pygmy Cory	10	235
	Neolamprologus leleupi		10	245
Jerry Jost	*Aspidoras albater* *		20	1840
Jim Miller	*Astatotilapia aeneocolor* @		20	2929
	Nomorhamphus towoetii		10	2939
Ed Millinger	*Nomorhamphus towoetii*	Dusky Halfbeak	10	705
Mar 2013				
Marlon Felman	*Puntius titteya*	Cherry Barb	10	165
Cory Koch	*Cyprichromis leptosoma "Kerenge Is"* *		20	2817
Jim Miller	*Herichthys carpintis*	Pearlscale Cichlid	10	2949
Dwayne Peters	*Corydoras aeneus*	Bronze Cory	10	73
	Rocio octofasciata	Jack Dempsey	5	78
Debbie Sultan & Tom Corradini	*Placidochromis milomo* *	VC-10	15	100
Kurt Zahringer	*Julidochromis ornatus*		10	480
	Tilapia bythobates @	Bloody Deepwater Cichlid	30	510
Apr 2013				
Marlon Felman	*Ancistrus cirrhosis*	Bristlenose Pleco	10	175
	Poecilia sp. "Domestic Molly"	Silver Molly	5	180
Cory Koch	*Betta burdigala* @		40	2857
Bruce Mayhew	*Xystichromis phytophagus* @		20	305

Debbie Sultan & Tom Corradini	*Placidochromis phenochilus "Tanzania"* @		20	120
Rick Tinklenberg	*Brachyrhaphis roswithae* *		15	2360
	Corydoras Panda	Panda Cory	10	2370
	Geophagus steindachneri "Nieva"		10	2380
Kevin Wise	*Corydoras aeneus*	Albino Cory	10	10
	Poecilia wingei	Black Bar Endler	5	15
	Xiphophorus nezahualcoyotl	Nezzy Swordtail	5	20
Evan Wright	*Astatotilapia calliptera*		10	10
	Illyodon furcidens	Gold Breasted Goodeid	15	25
	Poecilia reticulate	Black Moscow Guppy	5	30
	Poecilia wingei	Endler's Livebearers	5	35

* = 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

Congrats to the following BAP Award Winners:

Advanced Breeder: Marlon Felman, Steven Hoffman

Senior Breeder: Steve Edie, Nick Scarlatis, John Stollhans

Master Breeder: Nick Scarlatis

Grand Master Breeder: Kurt Zahringer

Senior Grand Master Breeder: Jerry Jost

Ultimate Grand Master Breeder: Charles Harrison, Cory Koch, Derek Walker

Grand Poobah Master Breeder: Mike Hellweg

Breeder of the Year: Derek Walker

CARES Breeder of the Year: Derek Walker

HAP Report March - April 2013

Mike Hellweg

Welcome to Evan Wright, who has started off his participation in the HAP with 10 species, including a MASI First! Also, three other new HAP participants, Dwayne Peters, Nick Scarlatis and Cory Koch, continue participate actively. Great going guys!

I should note that over the past several years Evan and several others have submitted *Hemianthus micranthemoides*. Like many of our fish, the name has changed - way back in 1867! The Missouri Botanical Garden Tropicos database has been created to clear up confusion like this as they slowly expand to include more and more scientific literature. This plant was first described by Thomas Nuttall in 1817 in the Journal of the Academy of Natural Sciences of Philadelphia. In 1867 Asa Gray moved it to the genus *Micranthemum* with the specific name of *nuttallii* to honor Mr. Nuttall in his *A Manual of Botany of the Northern United States*. And yes, for those of you who don't know, it is a native US species - found in the coastal US in Delaware and North Carolina. Much of the year it grows emerse along the banks of streams and rivers. Until someone else moves it again, *Hemianthus micranthemoides* should be more correctly known as *Micranthemum nuttallii*.

Member	Species	Common	Rep	Pts	Total
Mike Hellweg	Utricularia macrorhiza *	Largestem Bladderwort	V	5	3195
Marlon Felman	Limnobium laevigatum	Brazilian Frogbit	V	5	130
Nick Scarlatis	Bacopa monnieri	Baby's Tears	V	10	30
Nick Scarlatis	Limnophila repens		V	10	40
Nick Scarlatis	Lindernia rotundifolia	variegated Watermelon Plant	V	10	50
Nick Scarlatis	Myriophyllum mattogrossense	Southern Milfoil	V	10	60
Evan Wright	Alternanthera reineckii	Red Hedge	V	15	15
Evan Wright	Anubias barteri nana	Dwarf Anubias	V	15	30
Evan Wright	Bacopa monnieri	Baby's Tears	V	10	40
Evan Wright	Cryptocoryne pontederiifolia		V	15	55
Evan Wright	Mayaca fluviatilis	Bottle Brush Plant	V	20	75
Evan Wright	Micranthemum nuttallii	Baby's Tears	V	15	90
Evan Wright	Microsorum pteropus	Java Fern	V	10	100
Evan Wright	Rotalla wallichii		V	15	115
Evan Wright	Sagittaria subulata subulata	Common Sag	V	5	120
Evan Wright	Staurogyne sp. Bihar *		V	20	140
Andy Walker	Blyxa japonica		V	15	545
Andy Walker	Blyxa japonica		IB	20	565
Andy Walker	Myriophyllum aquaticum	Parrot's Feather	V	5	570
Andy Walker	Nymphaea sp. *		V	20	590
Andy Walker	Vesicularia montagnei	Christmas Moss	V	10	600
Cory Koch	Didiplis diandra	Caterpillar Plant	V	15	50

Cory Koch	Heteranthera zosterifolia	Stargrass	V	15	65
Cory Koch	Hygrophila difformis	Water Wisteria	V	5	70
Dwayne Peters	Egeria najas	Curly Leaf Anacharis	V	5	100
Dwayne Peters	Eleocharis vivipara	Hairgrass	V	10	110
Dwayne Peters	Ludwigia repens	Red Ludwigia	V	10	120
Dwayne Peters	Vallisneria Americana tortissima	Corkscrew Val	V	5	125

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

Auction Chairman's Message

Mike Hellweg

Wow! Our second auction for this year was just a few dollars short of our record February auction! Thanks to all of you who helped, donated, bought raffle tickets, ran the front and back tables, ran items, helped us set up, checked people in, checked people out, and everything else that helped make it a success! This is a team effort, and I'm really glad to see all of the folks helping out.
The 125 gallon raffle tank, top, light, and stand supplied by Tropical World Pets was won by Mark and Alex Mattman. Congratulations!
Please let the folks at TWP and all of our other supporters know how much you appreciate their support! I hope we see all of you at the next auction, August 11, 2013.

And for now, 'nuff said
Mike
auction@missouriaquariumsociety.com

Electronic Distribution Now Available

For those who prefer, the Darter is now available electronically, instead of the paper distribution. To change from paper to electronic distribution, email me at editor@missouriaquariumsociety.com. You will get your Darter sooner and the club will save printing and postage. And, starting in 2013, you will save $5 on your membership.

2013 MASI Spring Fling Fishy Thing Show Winners

Scott Bush

On April 12-14 we held our annual show, the 2013 Spring Fling Fishy Thing at the St. Louis Airport Crowne Plaza Hotel. Due to some last minute changes our speaker lineup was Viral Surati, Mike Wickham, Steve Edie, Rusty Wessel and Mike Hellweg. The speaker room was sponsored by Cobalt Aquatics. In the vendor room we had Ray Kingfish Lucas promoting the hobby like only he can along with Arch Aquatics, Plecocaves.com, HCA Aquatics and Thai Sun Bettas. Our fish show consisted of around 30 entries in 10 different classes. The awards banquet was held on site Saturday night with Mike Wickham giving a very entertaining talk on myths in the hobby. The meal was excellent and everyone had a great time. Our spring auction was held on Sunday and even with competing with a beautiful 80 degree day, we still had our 2nd best auction ever. Over all the weekend went well, foot traffic was down but we hope this years event creates a buzz and the show will continue to grow each year. Next year's event will be held at the same location from April 4-6….mark your calendars and start planning your weekend now!!!

Class 1 – Aquascaping
1. Ed Millinger
2. David Bell

Class 2 – Livebearers
1. Hi-fin Sword – Larry Albright
2. Xiphophorus helleri – Larry Albright
3. Guppy – Mike Slater

Class 3 – Characins
1. Hyphessobrycon eryhrostigma – Ed Millinger
2. Megalamphodus megalopterus – Larry Albright
3. Hyphessobrycon rubrostigma – Larry Albright

Class 4 – Cyprinids
1. Cherry Barb(F) – Mike Slater
2. Cherry Barb(M) – Mike Slater
3. Gold Barb – Mike Slater

Class 5 – Anabantoids
1. Betta macrostoma – Ed Millinger
2. Belontia signata – Jim Miller
3. Betta splendens – Mary Daly

Class 6 – New World Cichlids
1. Gymnogeophagus labiatus – Ed Millinger
2. Geophagus stiendachneri – Jim Miller
3. Neetroplus nematopus – Jim Miller

Class 7 – Old World Cichlid

1. Pseudotropheus tropheops – Jim Miller

Class 8 – Catfish

2. Panaque nigroleatus – Jim Miller
3. Corydoras melini – Larry Albright
4. Corydoras aeneus albino – Larry Albright

Class 9 – All other fish/critters

1. Ambystoma Mexicanium – Micheal Steffan

Class 10 – Art/Photography

2. Wood carving – Kathy Daly
3. Geo drawing – Becky Millinger
4. Betta albimarginata photo – Gary Lange

Best of Show

Betta macrostoma – Ed Millinger

People's Choice

Betta macrostoma – Ed Millinger

From The Fish Room

By Ed Millinger

At a recent auction I was lucky enough to outbid Jim Miller for a pair of "Dusky Halfbeaks". Four days later at our meeting Jim gave me a starter culture of wingless fruit flies. They are great for any top water fish. The recipe I find that works best for culturing these flies is this, a quarter teaspoon of sugar, 2 teaspoons of yeast, a quarter cup of instant potato flakes and a teaspoon of corn meal. Once you have mixed this up you dampen it with apple vinegar to a moist consistency. You may use a deli soup container with small holes poked in the lid to house your culture.

If you are looking for a different flake food to try, visit Mike Hellweg's table at our monthly meeting and pick up some crustacean flakes, my fish loved them from first bite.

This issue's MASI's way back machine takes us to the May/June 1991 Darter. Ralph Wilhelm was president, Jim Thale vice president, Kitty Mueller secretary, and our treasurer was Jim Brodack. We had a council of eight members back then. Show chair Pat Tosie reported on the recent show which featured talks by Chuck Davis and Pat Hartman and had more than 250 entries. Chris Frillman took home the judges award with a pearl gourami and Pat Tosie won best in show with a Chichasoma (now Archocentrus) spinosissimus. This issue included the membership list which stood at 121 members.

I would like to thank everyone over the past few years who have given me their excess duckweed to feed to my Uaru. Unfortunately I recently lost my last one am now back to trying to eliminate it rather than propagate it.

Scott Bush did a great job with the show this year and it looks like we had another tremendous auction. It's always good to see Ray "Kingfish" Lucas in town.

Making a Simple Spawning Grate

By Mike Hellweg

In the wild egg scatterers broadcast their eggs over a wide area and count on sheer numbers to ensure that at least a few eggs will fall somewhere that they will be safe from predators. In the aquarium space is limited and the eggs are in a confined area where egg predators, including their parents, can eventually find them. This necessitates some sort of protective device to separate the eggs from the predators. We call this device a spawning grate. It is usually made of plastic mesh with openings that allow the eggs to fall through while being small enough that the adults can't get through to the eggs. There are almost as many variations in design as there are hobbyists who use them. Here are two easy to make yet versatile designs that anyone can create with simple tools.

Whole bottom grate

This design uses plastic needle point canvas (available in the craft department of any large retailer) to create the spawning grate. There are usually two size meshes from which to choose. Choose the larger mesh canvas, as the fine mesh is too small to allow the eggs of many species to fall through. Measure inside the glass on your spawning tank from one end to the other lengthwise and cut the mesh to this exact size. You want it just touching the glass at either end so the fish can't get underneath. Now measure the width of the tank on the inside glass and cut the mesh one inch larger than the width. When you insert the mesh into the tank, it will bow slightly downward. Wash the grate to remove any dirt or oils and it is good to go. When using it, install it so the bottom of the bow is still an inch or so above the bottom of the tank so you can see the eggs. Fill the tank with water with the appropriate parameters, add the grate and a clump of well washed Java moss (or other fine leaved plants or even a spawning mop) sitting on the mesh and it's ready to use.

Removable grate

This design uses a small dish with a lid and eave vent screen (bought in a roll from a hardware store - it has a larger mesh than regular window screen). Cut the screen into a sheet slightly larger than the lid of the dish – about two inches bigger all around. Cut a large opening in the lid, leaving the edges intact all around. Place the screen on the dish leaving the overlap hanging, and push the lid down on the container. This will give you a tight seal and stretch the mesh taught. If it's a glass dish, no weights are needed. If it is a plastic dish, weigh it down with a couple of marbles to keep it from moving around. When setting it in the tank, add a clump of Java moss or a fine leaved plant over the dish and it's ready to use. After the fish have spawned, you can gently move it with the eggs to a separate rearing tank.

Emersed Aquatic Plant Growth: Part I

By Rob Woehr

Reprinted from the March April 2013 Fincinnati of the Greater Cincinnati Aquarium Society

What is "emersed" aquatic plant growth? Before answering this question, let's discuss the state of an aquatic plant in our fish tanks. Truly aquatic plants that are growing 100% submerged underwater are in the submersed form. This is the form that us hobbyists are used to seeing in our planted tanks. When an aquatic plant emerges out of the top of the water with the water level no lower than the top of the substrate, the plant is in the emersed form. Comparing the two forms of the same species can have quite different appearances.

Aquatic plants come from ecosystems of high humidity such as swamps, bogs, marshes, lakes, ponds, and riverbeds. Many aquatic plants go through a wet season where water levels can be higher and a dry season where water levels can be lower. It is the water level that dictates which form an aquatic plant will grow in: Emersed or Submersed.

Why grow aquatic plants emersed?

Flower to truly ID a plant
To flower/propagate by seed (HAP points)
Propagate free of snails, algae, CO2 supplementation (the underwater woes)
Grow in foreground plants before filling tank w/ water (Dry Start Method)
Another way to keep an aquatic plant around if it is not currently part of setup

What are the benefits of emersed growth compared to submersed?

No snails
No algae on leaves
Natural sun light can be used instead of artificial lighting
No need to supplement w/ CO2
Less frequent fertilization
Easier to cultivate and on a larger scale
Cheaper to grow than tank grown
Faster growth
Ships better – hardier, less delicate

How can I grow my plants emersed? The simple answer is you need a terrarium. A high humidity environment needs to be created especially when transforming from submerged to emersed form. A terrarium can be made out of just about anything of clear plastic or glass. A 16oz cup, a fish bowl, or a fish tank each make excellent choices for terrariums. A terrarium can be as big or as small as you like.

Now that you have your terrarium selected, it is time to choose a substrate. The options are limitless, but are pretty much narrowed down to two different choices: nutrient rich and nutrient deficient. If you choose normal aquarium gravel or pool filter sand then you will want to think about how to feed your plants. Root tabs or liquid fertilizer are options. I like using nutrient rich Aqua Soil Amazonia, but even ordinary potting soil will work. 2 inches of substrate is a pretty good place to start.

Once the substrate has been put into the terrarium, it is time to plant it. Simply take a plant from your planted tank and plant it into the substrate of the terrarium like you would for a planted tank. Now it is time to fill the terrarium with water, but only enough to cover the plant. The entire terrarium does not need to be filled to the top. Choose a light source such as a light on an 18 hour timer or put it on the windowsill to get natural sunlight.

Finally, the terrarium needs a cover. While converting from submersed to emersed form, there is a slow transition period that is accomplished by starting with a completely submersed plant and then slowly lowering the water level until the plant is completely emersed. The cover can be left partially open at this point in order to encourage a more rapid rate of water evaporation. Allow the plant to grow out of the water then cover to retain humidity. Only leave the cover open as much as will allow

condensation to form on the sides of the terrarium. It is a good sign if it looks like it has been raining inside the terrarium otherwise the cover needs to be closed up more. Do not completely cover the top of the terrarium, because some air ventilation is needed. One of the best covers, especially on smaller setups, is clear plastic wrap with toothpick poked holes in it. This is to allow excess humidity to escape and more CO2 to enter. As the plant converts over to its emersed form, the first leaves may dry out and die. The new leaves do better. You may have to top off and replant the new emersed growth and discard the old submerged growth. The water level should be maintained at no lower than the surface of the substrate, the humidity should remain high, and the more light the better.

Now that you are all setup with your new terrarium, it is pretty much maintenance free. Open the lid maybe once a week for a short period of time in order to get some fresh air in there. If the cover is kept more open, misting the plant daily helps keep the humidity up. Make sure the water level doesn't get too low. Take special notice of how the shape of the leaves change during the transition. You may find that emersed plants grow faster than submersed. Depending on your goals, the true prize in this effort is when a plant flowers for its beauty alone. It's also an opportunity to truly ID a plant from similar looking species. Another goal would be to grow in a foreground plant quickly before filling the tank with water in order to get a jump start on a carpet and completely bypass the difficulties of starting a harder foreground plant underwater.

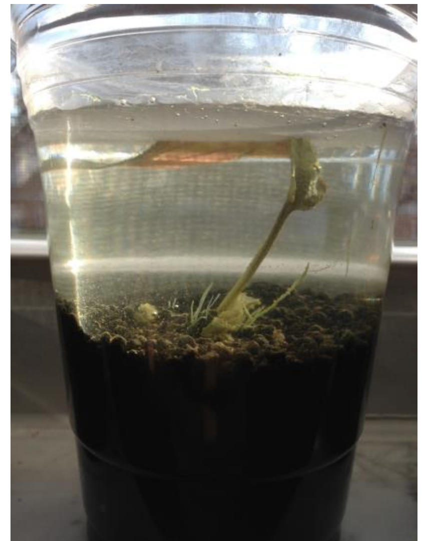
Next are some pictures of some smaller scale terrariums that were just set up. They range in size from 16oz cups to 1 & 2.5 gallon fish tanks. Stay tuned for Part II of this article in editions to come in order to see what kind of results I got out of my new setups.

South Facing Windowsill Clear Cups Setup

Marselia minuta
(Water Wisteria)

Hygrophilia difformis

Cryptocoryne wendtii ‘mi oya’



Bay Window Setups

Cryptocoryne parva – I cheated, because this plant was purchased in its potted, emersed form. I’m hoping to get a flower quicker out of this one.

Artificial Lighting

Glossostigma elatinoides

Editor’s Notes

Steve Deutsch

Congratulations to Kurt Zahringer for winning the Ralph Wilhelm Writing Award for 2012 for his article Keeping and Breeding *Danio tinwini* The Gold Ring Danio.

We still need an editor; three more issues in this year and my term. Article deadlines for those issues are June 15, August 15, and October 15.

Club Hopping 2013

Steve Edie

More dates will be added as clubs firm up their plans.

May 24-26 – Chicago: Greater Chicago Cichlid Association Cichlid Classic

May 24-26 – Portland, OR: American Killifish Association Annual Convention

Jun 20-23 – Ft Myers, FL: Florida Aquarium Fish Expo

Jun 22-23 – St Louis: St Louis Water Gardening Society – Pond-O-Rama

July 13 – Urbana, IL: Champaign Area Fish Exchange Summer Auction

July 18-21 – Denver: American Cichlid Association Convention

Aug 11 – St Louis: Missouri Aquarium Society Summer Auction

Sept 19 – Everywhere: Talk like a Pirate Day

Oct 5 – St Louis: Missouri Aquarium Society Swap Meet

Oct 10-14 – New Jersey: North Jersey Aquarium Society – 60th Anniversary Weekend

Nov 10 – St Louis: Missouri Aquarium Society Fall Auction

Nov 17 - Indianapolis: Circle City Aquarium Club – Fall Auction

Nov 22-24 – Cleveland: Ohio Cichlid Association – Extravaganza

Check with the individual clubs for more details.

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.

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

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Member Classifieds

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Charles Harrison (314) 894-9761, charles@inkmkr.com –

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Lavamisole HCl Powder - 5 grams treats 100 gallons …………...$10.00
Methylene Blue 5% solution (4 ounces) …………………………$12.75
Acriflavine Concentrate (4%) solution, 2 ounces ………………..$12.70
Bromthymol Blue pH test solution, 4 ounces ……………………$7.00

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.

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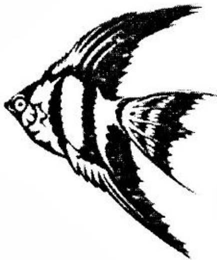

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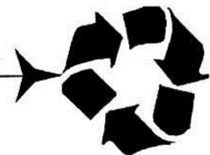

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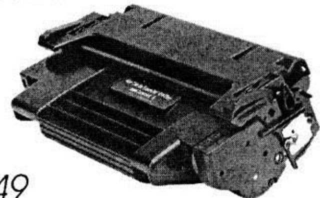

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