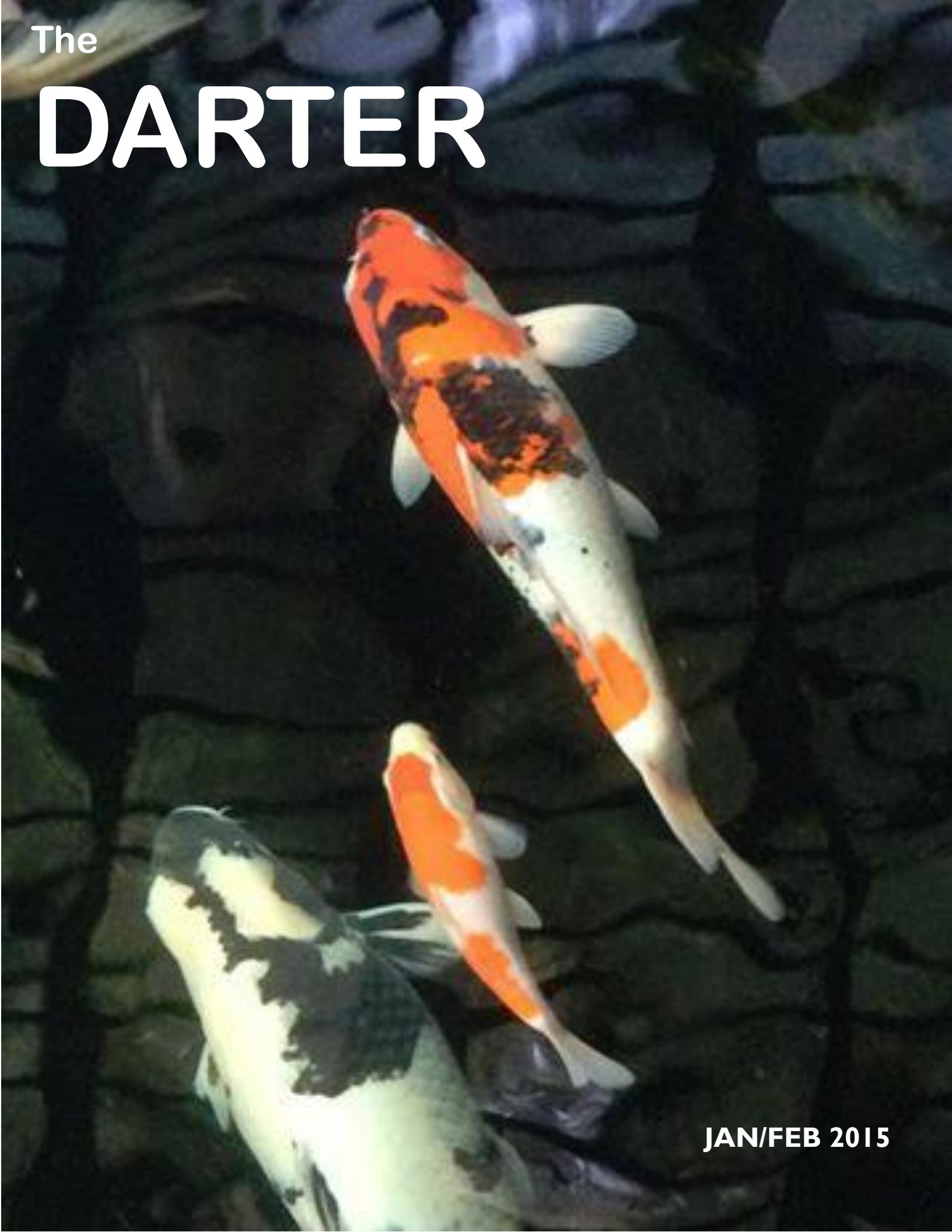


The

DARTER



JAN/FEB 2015

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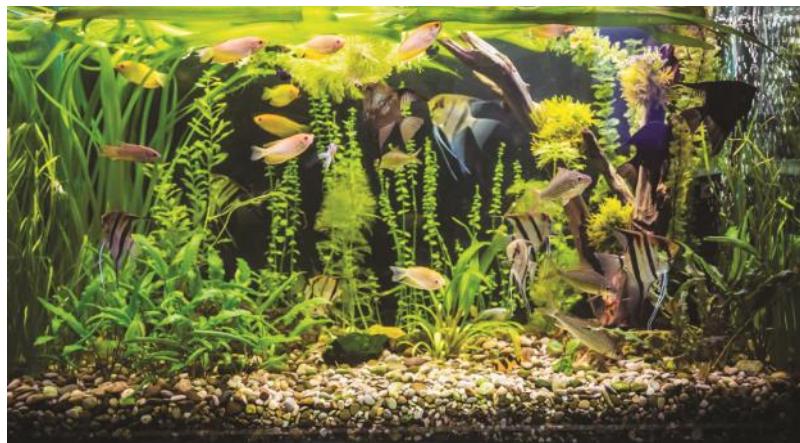
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Apitogrammas My Way

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Rineloricaria hasemani

By Roberto Prati

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Membership

Annual membership in the Missouri Aquarium Society, Inc. is \$15 and includes an electronic subscription to *The Darter*. A membership with a printed subscription is \$20. *The Darter* is published six times per year. You can join or renew your membership at any meeting, most club events, or by contacting Ron Huck, membership chair, at 314-481-2915.

MASI GEAR!

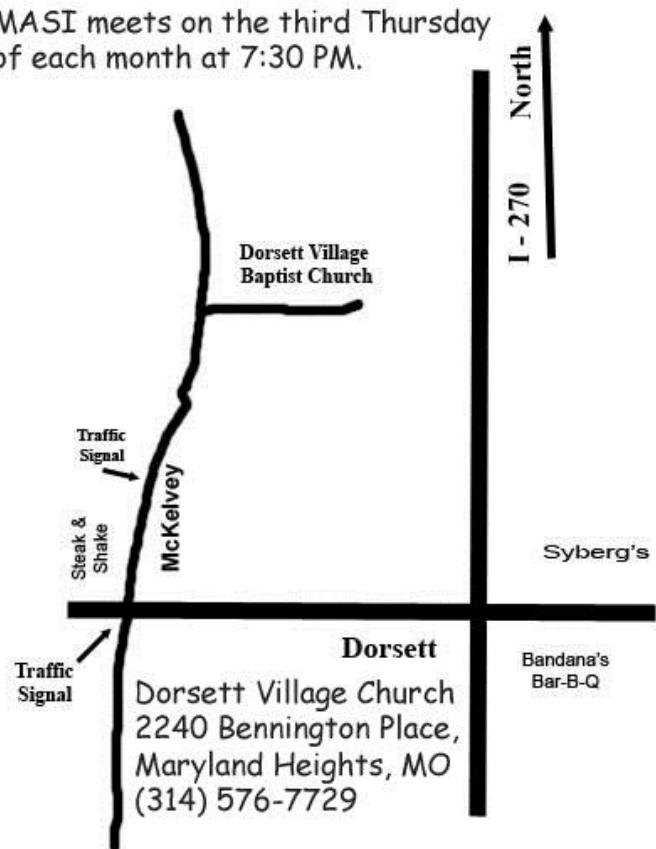
An expanded line of MASI Logo merchandise is now available from Café Press. Pick from T-shirts, jerseys, caps, tote bags, coffee cups, and more. Go to www.cafepress.com/MissouriAquariumSociety.



JAN 15—JEFF CARDWELL “BACK TO BRAZIL! – RIO NEGRO 2012”



MASI meets on the third Thursday of each month at 7:30 PM.



Jeff Cardwell has been active in the aquarium hobby for more than 40 years. He maintains over 60 aquaria and his interests and expertise extend to catfish, killies, rainbowfishes and cichlids. Jeff has traveled extensively to collect aquarium fishes in Brazil, Peru, Bolivia, Surinam, Uruguay, Mexico, El Salvador, the Bahamas and the U.S. Virgin Islands. An enthusiastic keeper of North America's native fishes, his collecting trips have also taken him to many parts of the United

States. Both as a speaker and a judge, Jeff has been a familiar figure at shows throughout the Midwest for more than thirty years. He is an active member of the American Cichlid Association, the American Killifish Association, the American Livebearer Association, and the Circle City Aquarium Society

It was about 25 years ago when I was at an Indianapolis Aquarium Society show when I saw Jeff and Charley Grimes pouring over a topographical map of

Brazil. They had some check marks on the map where they intended to go plus a scratch list of “Target” fish that they wanted to collect. It was at that moment that I knew that someday I wanted to do the same thing. I know Jeff will give us another interesting talk and perhaps this will be “the one” that gets you chasing a special fish or perhaps even planning for your own exotic collecting trip.

Gary Lange



Electronic Distribution Now Available In Full Color

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, as in 2014, you will save \$5 on your membership.

UPCOMING MEETING SPEAKERS

FEB 19—KATHY DEUTSCH “SPRING SHOW 2015”

Kathy will go over the classes and rules and give some suggestions on ways to get fish to the show and keep them happy and looking sharp. She'll go over a

list of handy items to have at setup to make preparing your aquarium fast and easy.

Gary Lange

Asia is the winner of the 75 Gallon raffle tank! Congratulations!!
Missouri Aquarium Society Annual Fall Auction



MAR 19—ERIC BODROK “CORY BREEDING MADE EASY”

Covers the set up, conditioning, spawning techniques and triggers to successfully spawn them. Good beginner and advanced hobbyist information included.

Eric Bodrock, 53, is the Owner of All Oddball Aquatics, a tropical fish hatchery and independent online retailer located near Pittsburgh. He and his fiancé, Regina Spotti, maintain about 250 aquariums in their home based hatchery and are working with many species of fish. Eric has been active in the aquarium hobby since age 10 and has worked in the retail, wholesale distribution, installation, and hatchery aspects of the industry. In addition to his accomplishment of successfully spawning nearly 500 species of freshwater fish, he has published articles, judged dozens of fish shows and has given many presentations abroad and has traveled to aquarium related events in Canada, Germany, Norway, the United Kingdom and all over the

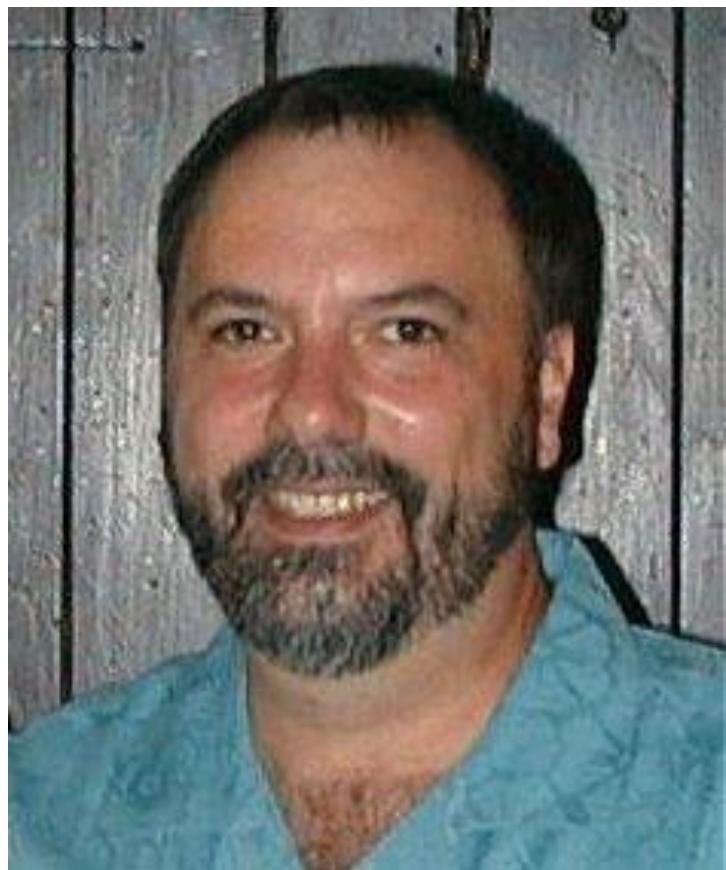
USA.

Eric is currently serving on the board of directors of the Greater Pittsburgh Aquarium Society, which he has been a member of for almost 40 years! He considers himself as a “Lifer” in the hobby and continues to promote the aquarium hobby in every possible way...you'll often hear him say: “There's always room for one more tank!”

He will also be doing a second talk on Friday March 20th at Jost Chemical Co.

“Get Them, Feed Them, Breed Them & Keep Them Alive”

What Bodrock does in his fish-rooms; how he prepares for shipping & receiving fish, foods fed and ideas for various diets, some methods for spawning fish and tricks of the trade to help keep fish alive!



Show-Me Fish 2015

SHOW TIME IS COMING!

Holly Wise and Kathy Deutsch are co-chairing the Spring Show "Show-Me Fish 2015".

There will be a fish show, vendors, speakers and an auction on Sunday. More details as we iron them out. We are having a betta raising contest, with the fish competing at the show.

See details on rules, classes and the betta contest in other parts of this Darter.

Many thanks to Gary Lange for bringing in the speakers.

There will be 16 classes in the 2015 show .

1. Aquascaping-free entry— Any tank with an entry will also be considered for the Aquascaping award.
2. Best School/Family or Biotope—Entry has a group of one species of fish, a breeding pair/group with fry, or a collection of species that occur together in nature.
3. Novelty/Theme—Tank to be judged on how well a theme is carried out, through the use of fish and decorations. In this class only, fish do not need to be

May 1-3

MAJOR AWARDS

Best Fish in Show

Judge's Award

Best Junior (age 16 and under) entry

Reed Thomas Livebearer Award

Ralph Wilhelm Catfish Award

CLASS AWARDS

1st prize \$10 and certificate

2nd prize \$5

3rd prize \$3

Note: There will be separate rules, and prizes for IFGA Standard Guppies, administered by Gateway Guppy Associates in conjunction with the MASi show.

owned for 60 days. The decor cannot be injurious to fish or plants.

4. All Other Fish—This class

encompasses any fish that does not fall into any other category. This class is also for any fish whose class has

2015 MASi SHOW RULES

ENTRIES

Open to all.

Entry fees: \$3 first entry, \$1 each additional entry.

Or all you can enter for \$10

FREE ENTRY:

Aquascaping

Each tank will automatically be judged for Aquascaping.

Tanks with multiple entries:

IT IS UP TO THE ENTRANT TO CLEARLY STATE ON THE ENTRY FORM WHICH FISH SHOULD BE JUDGED.

Multiple entries in one tank from different classes are ok as long as they are compatible.

As a matter of ethics, all entries must be the property of the entrant for at least 60 days before show. No deformed, dis-

eased, artificially colored (painted, dyed, or injected) or illegal fish may be shown. Illegal fish are listed at the end of these rules.

The judges and show chairmen reserve the right to pull any entry they deem injured, ill or abused by tank mates.

DISPLAY

All fish are to be entered in flat-sided bowls or tanks a minimum

fewer than 3 entrants.

5. Old World Cichlid
6. New World Cichlid
7. Rainbowfish/Killifish
8. Livebearers-Wild Type
9. Livebearers-Fancy Aquarium type
10. Eggayers: Cyprinids: Barbs, Danios, Rasboras, Minnows
11. Characins-Tetras and relatives
12. Anabantoids-except Fancy Betta spendens
13. Betta-Fancy Splendens (the bettas from the fish raising contest will also be in this category with separate judging and prizes)
14. Catfish: Corydoras, Scleromystax and relatives
15. Catfish: All other
16. Photography-print on photo paper and Art and Craft

Photographic Image must be made by the entrant from 2012 forward.

Art/Craft item must be made by the entrant from 2012 forward. Must be ready to display on a table. Nothing will be hung.

of 1/2 gallon or larger up to 30 gallons. IF an entrant wants to set up a tank larger than 30 gallons, he must get prior approval from the fish show chairman, AND provide his own stand.

Bare tank entries are allowed in all fish classes, though this is not preferred. Consider using gravel or sand, for the comfort of the fish. We encourage the use of a background for the comfort of

(continued)

Raise It Betta! Betta Raising Competition

Don't want to drag you prized discus out to the annual show?

Don't want to upset the *Synodontis* tank to fish out one specimen?

You bet you can still enter the show!

SHOW-ME FISH 2015 wants you to show off your fish raising skills with "Raise it betta!" The betta raising competition.

At the January 2015 General Meeting Kathy Deutsch will take pre-orders on young male Betta *splendens*. Built into the cost is

the ENTRY FEE to show it at the May 2015 annual show.

The pre-paid bettas will be delivered to the February 2015 general meeting.

Take your fish home and raise it betta than anyone else.

Bring it to the annual show on Friday May 1 to be judged—it's already entered!

Prizes to be announced.

Questions? Call or email Kathy Deutsch [\(314\) 741-0474.](mailto:kathy@skdeu.com)



2015 MASi SHOW RULES (CONTINUED)

the fish and the effectiveness of the display. Consider covering the sides and back of tank with opaque material (black paint, black contact paper, etc.) All entries must be neatly covered to prevent fish jumping out.

There are a limited number of flat sided drum bowls or flat sided "kritter keepers" that can be borrowed if an entrant does not have a bowl. Please contact the show committee early to reserve one.

Lighted entries are encouraged.

Live plants are encouraged. Filtration and aeration are optional, but strongly recommended for the health of the entry. Air and electrical outlets will be supplied. Guppies, Killies, and Betta *splendens* may all be entered singly or in pairs in covered bare bowls or

tanks of $\frac{1}{2}$ to 1 gallon in size. Naturalistic artificial decorations are allowed in all entries, and a flowerpot or PVC pipe may be used if needed for the comfort of the fish. For Class #10 – Photography – single picture entries must be printed for viewing.

JUDGING

All entries will be sight judged based on appropriate standards for the fish being judged. Decision of Judges and/or Show Chairmen is final. Show Chairmen may disqualify any entry for any reason at any time.

BANNED AND ILLEGAL SPECIES

MO Banned Fish/Aquatic Invertebrate/Plant Species that may not be sold at MASi auctions or displayed in MASi shows:

Fishes

Live fish or viable eggs of Black

Carp (*Mylopharyngodon piceus*)

Snakehead fish of the genera *Channa* or *Parachanna* (or the generic synonyms of *Bostrychoides*, *Ophicephalus*, *Ophiocephalus*, and *Parophiocephalus*)

Walking Catfish of the family *Clariidae*

Invertebrates

New Zealand Mudsnail (*Potamopyrgus antipodarum*)

Rusty Crayfish (*Orconectes rusticus*)

Marbled Crayfish (*Procambarus marmoratus*)

Australian Crayfish of the genus *Cherax*

Mitten Crabs of the genus *Eriochelir*

Zebra Mussels (*Dreissena polymorpha*)

Quagga Mussels (*Dreissena rostriformis bugensis*)

Mystery Snails of the genus *Cipangopaludina*.

Special notes for snails:

To avoid problems with various state and federal laws, the ONLY snails that may be sold are the following: common mystery snail (*Pomacea bridgesii*) in all of its various color forms, common ramshorn snails (various genera and species, generally called red, ivory, blue, leopard and brown – specifically NOT the Colombian or giant Ramshorn – *Marisa cornuarietis*), Malaysian trumpet snails (*Melanoides spp.*), "Assassin" Snails (*Anatome* (or *Clea*) *helena*), Nerite snails (various genera and species of the family *Neiritidae*).

Note: Spixi snails (*Asolene spixii*) are no longer allowed.

FROM THE PRESIDENT

Pat Tosie

Where did it go??? 2014 is no longer around! What happened?? Well, MASi had a wonderful year in 2014, and it went very fast. Now is the time for us to start anew with 2015 and see what we can do to keep us improving. What do you want to do this year? Get a new fish? Add a tank or two? Enter the show? Win Best of Show?? Breed a fish? Or maybe, breed MORE fish? Grow more plants? Get more involved with our club? How about go on a collecting trip?? Whatever you want, it all starts today!

Our next auction is February 8, 2015, you can start planning what you may want to buy or sell. You can start cleaning out your closet and see what you may have that

you don't use/need/want anymore and turn it into someone's treasure! Maybe 2015 will start off by planning out what you can do at the auctions.

Then our highlight for the year, "Show-Me the Fish 2015", our Annual Show. Kathy, Holly, and the rest of the gang have already been working for months to put on a fantastic show, bringing in super speakers and expanding show classes. Keep an eye out and ears open for all the exciting news about this upcoming event—you won't want to miss a moment of it.

Holly did a great job with the 2014 Swap Meet and she is looking to make the 2015 Swap Meet

even better. Be sure to let her know you want a table and reserve yours today.

One area that MASi can use help with is volunteers. We will be having several club positions coming open and WE NEED some new volunteers to take them over and help out. What can you do?? We are a volunteer organization, a club, a group of friends who look to each other for help. Be sure to talk to me or any of the officers and council members to see what you can do and how you can help us. The club does not run without people, so please get involved.

Elections are a few months away, but it is a good time to start



thinking if you may be able to contribute by running for an office or council or even heading up one of the committees. Leading a committee does not mean you do all the work, it means that you are in charge of getting it done! You talk to people, get volunteers to help out, plan meetings and/or events, and see what people want. It is only with the help of everyone that we grow. I look for this new year to be great and I am sure I can count on all the members to help make this the best year yet!

Keep looking below water....

FROM THE EDITOR

Mark England



I hope you've enjoyed the past year's issues of *The Darter*. We've had lots of good articles and fantastic photos.

The Darter is a team effort—I'd like to thank Ron Huck for keeping the subscription lists and Steve Edie for printing mailing labels and maintaining the lists for electronic and paper copies. Pat Tosie does so many things for the club and my thanks to him for taking care of mailing each issue.

Also, thanks to our regular contributors—Ed Millinger, Pat Tosie, Mike Hellweg, Gary Lange, and Steve Edie. Without them *The Darter* wouldn't be possible.

Many members have contributed feature articles in 2014—Tony McMillan, Ed Millinger, Mike Hellweg, Debbie Sultan, Holly Paoni-Wise, Kathy Deutsch, and Derek Walker

We also thank authors of exchange articles originally printed in other publications—Wayne Toven, Gerry Kuhl, Carmen del Rocío Pedraza Marrón, Omar Domínguez Domínguez, Dave Williamson, Bob Major, Joseph Ferenzi, Lisa Englander, Chuck Bremer, and David Ramsey.

I hope you'll consider writing for *The Darter*. It's really not difficult. Every aquarist has a story to tell, whether of successes or mishaps. Every BAP and HAP submission has a success story that others would like to hear.

"But I'm no good at writing" is an excuse I've heard many times. As your editor, my job is to make your article shine. I fix up grammar and spelling and sometimes sentence structure to make every article a little more polished. I don't change your content.

You can submit a piece in any format you like—Word, email, anything. Give it a try—what interests you aquatically, is of interest to others.

One last word concerning the distri-

bution lists for electronic and paper versions of *The Darter*. Ron Huck, Steve Edie, and myself make every effort to keep them correct and up to date. If you didn't receive an issue or received the wrong format, please let Ron Huck (314-481-2915 or emperortetraon@yahoo.com) know. The distribution lists change for every issue.

Finally, if you currently receive a paper copy, I encourage you to change to the electronic format (PDF) if you have email. You'll save money, the club will save money, and you can enjoy *The Darter* in full color. If you still want a printed copy, the electronic version will print on your home printer exactly as shown.

From The Fish Room by Ed Millinger

As your points tabulator I am pleased to announce that this year we had nine members reach and exceed the one hundred point mark earned by participating in club activities. We also had for the first time two members earn over 150 points. It was a very tight race for the top spot which will be revealed along with the show champion at the annual banquet on Saturday May 2nd. For information on how points are earned for service go to the website and click on "WHO WE ARE" and look under the club address and click on "download MASi handbook".

Congratulations to Kevin and Holly Wise for their record eighty submissions in 2014 for the HAP program. Believe me, as someone who turned in one submission last year, that is very impressive.

It sure is great to have Connie and Chuck Bremer living close by. They are a real asset to MASi.

The November/December issue

of Amazonas (page 80) had an interesting observation by Richard Brode concerning the temperature at which Betta species (especially bubble nest builders) are kept. He contends that if kept in the mid-seventies as opposed to the high seventies and into the low eighties that they will be healthier and live longer.

The January issue of TFH has a great article by Lawrence Kent (former MASi member and local resident) about the African arowana.

The January/February issue of Amazonas features whiptails on the cover. One of my all-time favorite entries into our annual show was a family of whiptails displayed by Jim Thale. He used black gravel and a few pieces of driftwood to showcase his entry.

A huge tip of the MASi cap to all involved with the Christmas party, especially the Koch's—Amber, Cory, and Chance. The food was delicious, the gifts plentiful and Santa was on his game, big time.

Christmas party flashback—

before we moved to the church we met in the building at the end of the lot and I remember Noel Roberts jumped on Santa's (Reed Thomas') lap. It made for quite a bit of hilarity.

Thanks to everyone who brought food for the church's food pantry in December. The church probably would not object if we brought food any month of the year. It's a great way to thank the church for providing us with such a nice venue to meet.

Riddle me this fish man-

Why did the trumpet snail cross the aquarium? It wanted to *horn* in on someone else's territory.

Why did the banjo cat cross the aquarium? It was being *picked* on too much.

Why did the angelfish cross the aquarium? It was fleeing the red devil.

Why did the Siamese fighting fish cross the aquarium? It was searching for a Betta life.



Fishy headline—

Clown Loach Arrested for Attacking Snails, Filter Media Promises Gravel to Gravel Coverage

In a related development an attorney for the loach claims the prosecution has a *shell* of a case.

Speaking of loaches did you hear about the aquarist who rescued a horseface loach because he thought it deserved a more *stable* life?

Does it *annoy* you that I figured out how to use the *Italicize* button? Have a *fantastic* day, afternoon or evening.

Editor's note—Ed Millinger is solely responsible for this article.

Auction Chair's Message by Mike Hellweg

Our next auction is February 8, 2015. Last year's winter auction was our best ever. I'm not expecting that again – after all, they wouldn't be records if they happened all the time! But I still hope we have a great turnout. We have plenty of sellers and plenty of great items to bid on, but the auction is nothing without buyers. Only about half our members come to the auctions. Why? We have a great turnout

from the general public and always recruit many new members. If you haven't been to an auction in a while, you might be surprised. The hotel is a great location – clean, quiet, big, and with easy interstate access. TGI Fridays downstairs has great food. We have plenty of room to talk, look at fish, and have an auction. Come by for a while and check it out. It's a great time to socialize, talk fish and have fun.

Volunteers are needed. We'll need lots of hands to help out; especially to get things setup and running in the morning. If you want to help, we can use extra hands starting around 9:00.

Oh, and don't forget to thank Chuck and Mark from Tropical World Pets for helping us out with a 75 gallon tank, top and light again for the February auction raffle!

Our 2015 auction dates are:

- February 8, 2015
- May 3, 2015
- August 9, 2015
- November 1, 2015

And for now, 'nuff said

Mike

auction@missouriaquariumsociety.com

FISH FLUSHERS!

POPLAR BLUFF, MO (as reported by KFVS)

Two Poplar Bluff, Missouri men are accused of flushing their neighbor's fish.

Eric Haynes was charged with stealing animals and tampering with evidence.

Steve Zuniga was charged with stealing animals, tampering with evidence and possession of drug paraphernalia.

Both were taken to the Butler County Jail.

According to Poplar Bluff police, they went to the 1800 block of North 14th Street on Tuesday in reference to a stealing complaint.

They say a man reported that a tropical fish valued at \$296.06 was taken from the front porch of his home shortly after it was dropped off by FedEx.

The man's home surveillance video cameras captured footage of the theft. After looking at the footage, police went to the home next door and talked to Haynes and Zuniga.

Police say Zuniga admitted they took the package from the front porch, opened it and flushed the fish down the toilet.

In the living room of the home where Haynes and Zuniga were arrested, police say they saw marijuana and drug paraphernalia lying on a coffee table.



Third Successful Removal of Non-native Fish Recorded by Reef Environmental Education Foundation (REEF)

On December 14th, 2014, REEF staff and volunteers recorded the third successful pre-emptive removal of a non-native fish in south Florida coastal waters when they removed a mimic lemon peel surgeonfish (*Acanthurus pyroferus*) from waters under the Blue Heron Bridge in Palm Beach County.

Since 1996, members of the marine conservation non-profit Reef Environmental Education Foundation (REEF) have been proactively increasing awareness and engaging in removals of non-native species before they can become established and cause problems in Florida's coastal waters. Removals in 1999 and 2002 of four large Indo-Pacific batfish (*Platax orbicularis*) from Molasses Reef in Key Largo set the stage for an invasive species outreach and control campaign,

followed by the removal of a whitetail dascyllus damselfish (*Dascyllus aruanus*) from the east side of the Blue Heron Bridge in 2009. The latest removal of the mimic lemon peel surgeonfish, the first record of this fish in Florida waters, occurred on the west end of the bridge. A humpback grouper (*Chromileptes altivelis*) was also removed by a local spearfisherman from a reef off Biscayne National Park in 2012.

More than 30 species of non-native marine fish have been documented in Florida coastal waters (Schofield et al 2009), most believed to be released aquarium pets. Invasive lionfish, first sighted in Florida in 1985, are the only one of these species



to have become established and are now causing severe problems throughout the western Atlantic, Caribbean and Gulf of Mexico. "Prevention is the best case scenario" says REEF's Director of Special Projects, Lad Akins, "but barring that, early detection and rapid response are key to preventing another lionfish-like invasion".

The Eastern Iowa Aquarium Association Auction

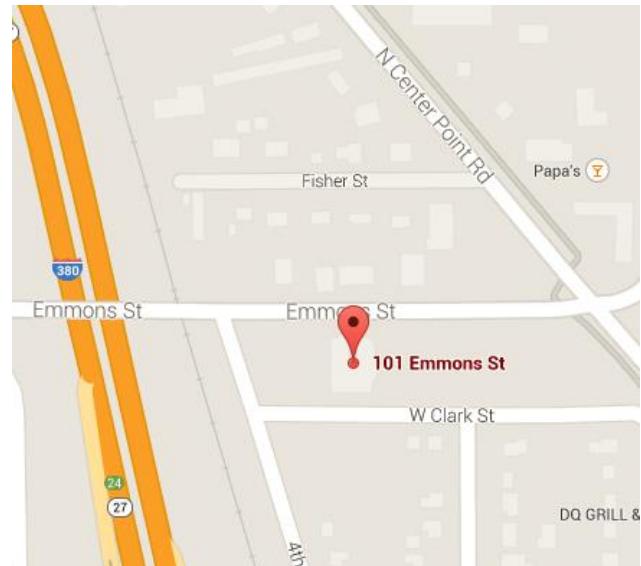
Saturday, March 14, 2015

Hiawatha Community Center

101 Emmons Street, Hiawatha, IA

Easy access from I-380 just north of Cedar Rapids, Iowa, from Blairsferry Road exit

- Viewing at 9 am
- Bidding starts at 10 am
- Seller registration is available in advance
- More info at www.finflap.com



CLUB HOPPING By Steve Edie

Check with the individual clubs for more details.

Feb 8	St. Louis	Missouri Aquarium Society	Winter Auction	www.missouriaquariumsociety.com
Mar 20-22	Hartford, CT	Northeast Council	Annual Convention	www.northeastcouncil.org
May 1-3	St. Louis	Missouri Aquarium Society	Workshop, Banquet, Auction	www.missouriaquariumsociety.com
May 22-24	Chicago	Greater Chicago Cichlid Association	Cichlid Classic	www.gcca.net
Aug 9	St. Louis	Missouri Aquarium Society	Summer Auction	www.missouriaquariumsociety.com
July 30-Aug 2	Springfield, MA	American Cichlid Association	Annual Convention	www.cichlid.org/
Oct 3	St. Louis	Missouri Aquarium Society	Swap Meet	www.missouriaquariumsociety.com
Nov 1	St. Louis	Missouri Aquarium Society	Fall Auction	www.missouriaquariumsociety.com
Nov 20-22	Cleveland	Ohio Cichlid Association	Extravaganza	www.ohiocichlid.com

DIRTED SUBSTRATE TANKS

By Holly Paoni-Wise

Dirted tanks are just about the perfect medium for growing plants. With proper care and planning they are beautiful, but if not thoroughly planned and researched, can turn into it yucky muddy mess that takes dozens of water changes before you can even see your hand in the tank!! I care for my fish room mostly on sight (noticing the odd) and gut instinct, but starting a dirt tank doesn't work that way unless you want to play with mud pies in the fish room. I've been there and done that. It isn't any fun, and could make most sane folks stop trying !!

In a basic dirt tank, ferts and dirt go at the bottom, and then are capped by fine gravel or sand. The denser cap keeps the dirt out of the water column, and you have nice clear water. So when you plant up these tanks, it is imperative that you do not remove or rearrange the plants. Doing so will break the cap and lead to the above muddy mess.

You need to plan for the full potential of each plant above and below the cap. A plant may start out at 3 inches, but could grow to 2 feet! Is the tank you are planting capable of dealing with that full size of 2 feet?? If not look for a plant that will fit in the tank, full grown. Also you need to think about taller plants shading shorter plants, and arrange the plants in a way this is not an issue later on with growth.



Plants with slow growth rates, or finer roots work the best in dirt tanks as they don't take over the tank, they just fill in nicely. Crypts, stem plants, and carpeting plants are a great choice. Crypts are slow growers for rooted plants and it would take a long time for crypts to become an issue where they had to be thinned out. Stem plants are typically trimmed from the top of the plant, versus moved, so these are also a great option. Carpeting plants- baby tears, dwarf grasses, and so on do well in these tanks without causing problems. Some have such shallow roots that they barely break through the cap into the actual dirt far enough to even make a mess.

Rooted plants especially on runners, that have a tendency to take over, like common Vallisneria, really shouldn't be part of the plan in a dirted

tank. One Val has a tiny root system which isn't that big of a deal. But that one Val is connected to the majority of the other vals in that same tank. Moving that one, could make the rest break that cap.

So research the plants, research similar plants of various growth rates and sizes, and if one plant you want to use won't really fit, you already have a list of substitute plants. Next, work out a planting plan for the maximum size of each plant chosen, including possible shade. It is also time to pick out any hardscape, rocks, and driftwood, etc. that you want to include in your final aquascape. Like the plants, you really do not want to move these around after it's done. Once this is finished, it's time to move on to the actual set up. This may seem backwards, but going in this order will yield much better results!

DIRTED SUBSTRATE TANKS

“Dirted tanks are just about the perfect medium for growing plants. ”



The research phase of the process is also the time to pick out what type of dirt and cap you will be using in your tank. There are many types available. Figure out which would work best for your application. I like plain old fashioned top soil and play sand. Both are available at every home improvement store or garden center. They are cheap and take a bit more work, but give a nice natural look. Top soil needs a bit more of certain ferts, or can be mineralized. Play sand needs thorough washing, but the finished grain size in the cap layer varies subtly, a look I prefer. Use what you like. What would YOU enjoy ?

You have done your research and you have a plan, so now it's time to actually get this set up. Pick a time to do this when you will not be rushed. Get everything together before starting, so everything is in easy reach. A few extra towels around never hurts either.

Any dry ferts- I sprinkle those in the bottom of the bare aquarium first. I use Jobe's Houseplant Spikes as my main fertilizer, as it is what works for me. I take a razor and just make thin slices off the spike. For a 10 gallon tank- this would be one spike thinly sliced and scattered. If using another base fertilizer, follow the directions on the packaging.

Next, add in about an inch of your capping material, around the entire perimeter of the base of the tank. This will keep you from seeing the dirt throw the glass later, and give the cap a cohesive look. We will add to this in another step. Once all the edges have had a bit of capping material, I start adding the dirt. For now, I only go about that same 1 inch deep that the capping material is. If I find any clay, I break it up and so on with my hands at this time. Clay is actually great to have in this dirt layer, in small amounts, in small pieces. Clay

retains quite a bit of nutrients for the plants to feed on, but is hard for plant roots to penetrate.

Once there is a full inch of the 2 substrates covering the base of the tank, I repeat the dry ferts, and repeat adding the cap, and dirt lay again, going about 1.5 inches deep this time. This gives about 2.5 inches of substrate. The cap will make this equal about 3 inches, but we aren't ready for that yet.

Now it's time to add the hard-scape. Rocks could have been added much earlier, but driftwood pieces need the majority of the substrate in, so you can dig them into it, to help support them in the chosen position, prior to capping. If your driftwood will have plants attached to it, I recommend doing this prior to this project. Once the rockwork is adjusted to touching the bottom glass, and driftwood is in place and

DIRTED SUBSTRATE TANKS

supported by the substrate, it is time to look at your plants.

I like to add any larger rooted plants I may have chosen prior to capping the dirt. These plants would be your Swords and Crypts for example. Swords typically aren't the best choice for dirted tanks, but with all new varieties of smaller growing Swords making their way into the hobby, some of these will work well, in certain tanks. After those are in their final position, and secure, it's time to cap the entire substrate so start sprinkling it evenly over the dirt.

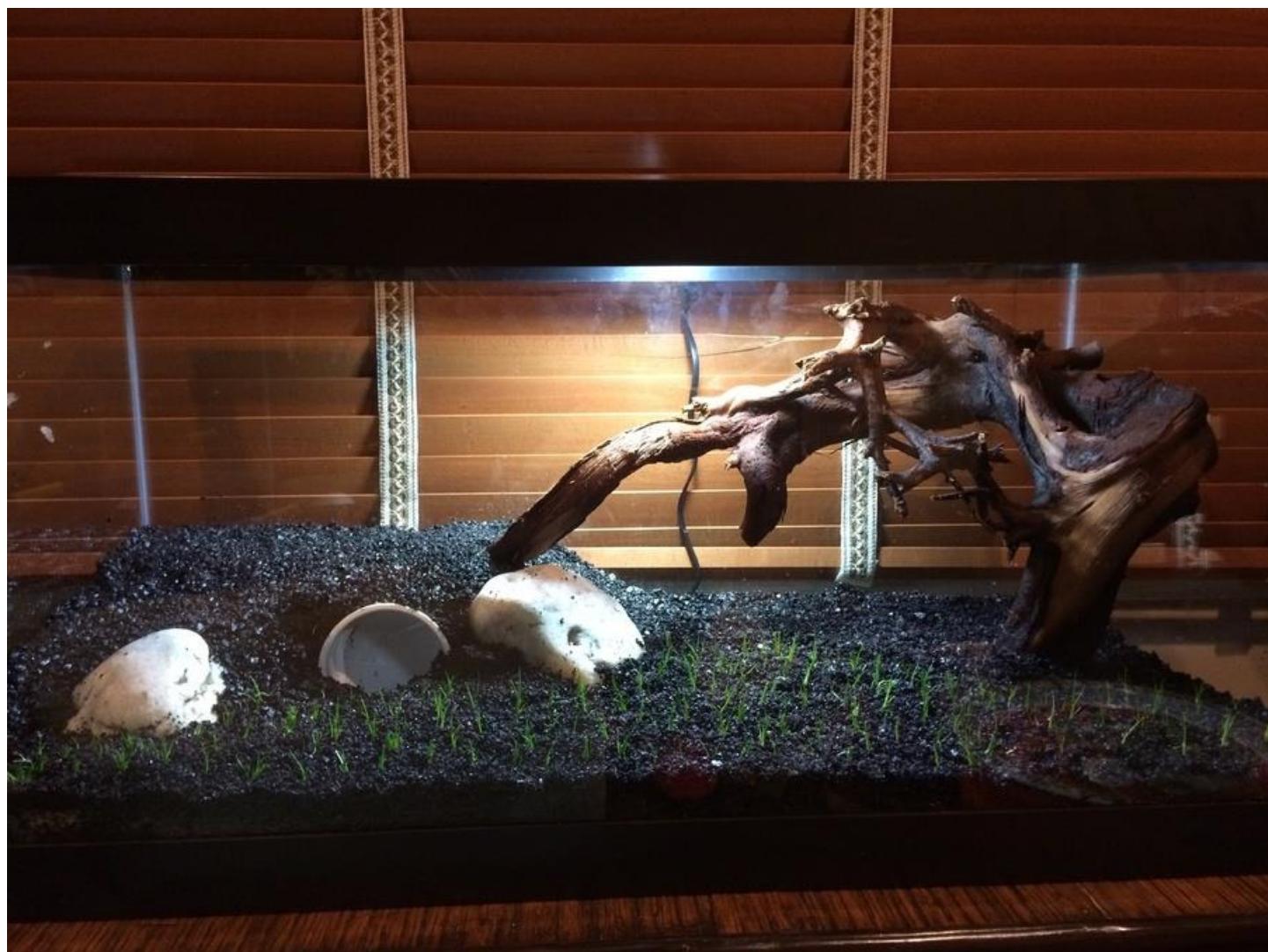
Now it's time to start adding water. To make this easier and cleaner, lay down a couple sheets of newspaper over everything in the tank, and slowly add the water over the paper. The newspaper protects the cap, from the force of the water entering the tank. You can also use a shallow dish, plate or bowl. Since the majority of my tanks are nano-sized, getting a plate in a 10 gal tank with hardscape doesn't work out as well as the newspaper. Newspaper though, works just as well in a larger tanks. Just slowly pour the water over a high point of

the paper, or into the bowl, letting it slowly overflow into the tank. Once the tank is about halfway full, I pull out and discard the newspaper, and start planting the foreground.

I like to work from the front to the back. Others may work from the back to the front. Do whichever you are most comfortable with. Give each plant a bit a room to fill out, grow and multiply as you plant. For carpeting plants that spread out, equally placed small plugs work well. Just remember your plan, to give each the room it needs when full grown.

Once the tank is fully planted, I slowly finish filling up the tank. Placing your hand at this point between the water flow and the tank, disperses the water, and keeps the influx of water from uprooting all your hard work. Add in a seasoned filter, and the tank is finished.

I like to wait 2-3 weeks after planting, before adding in livestock. This gives times for the plants to root themselves in, and if there will be an ammonia or nitrate spike from the dirt, it will happen and can be remedied during this time. Just remember to feed the filter an



DIRTED SUBSTRATE TANKS

ammonia source to keep the beneficial bacteria in the seasoned filter alive.

Caring for a planted dirted tank is a bit different than carrying for one with standard gravel or sand, as you do not want to disturb the cap over the soil. When cleaning inside glass, vacuuming, and so on, extra care must be taken.

I just mentioned vacuuming a dirted tank??? Yes I did - extra food and so on can fall into your carpeting plants, or leaf litter or mulm can build up and need vacuumed out. The easiest way to do this is to hold the siphon a couple inches above the area, and gently swish the water over the area with it. The water flow will

bring up these particles, and make them easier to siphon out, without disturbing the plants or cap.

Gasses over time can build up within a capped substrate. There are 2 ways to prevent, and release these gasses. Trumpet snails, in small amounts, will burrow throughout the soil, and release these in small amounts as they do. A couple of these snails in a tank really do not cause any issues. Their populations are self-limiting. This means they only reproduce given an adequate food source. If you keep algae at bay, vacuum up debris, and are careful to not overfeed, these will do the work for you, without a population explosion. If you get behind on your part

of the workload, they will quickly reproduce and take over a tank. The key is greatly limiting the available food to these snails to keep their population in check.

The other tool, is a bamboo skewer, or shish kabob stick. These are long, and narrow and pointed, and available by the couple dozen cheaply at most department stores and groceries. The small diameter works well at poking tiny holes throughout the substrate, routinely to release any anaerobic gas pockets that may have formed. They also work well for pushing down tiny roots and runners from plants like dwarf hair grass and micro sword that are carpeting the foreground of the tank.

Changing water in a dirted tank, once the plants have well filled in, is about the same as doing so in any other tank, as the plants protect the cap. That keeps the soil from entering the water column. But until those plants have filled in, care must be taken when refilling the tank. A slow gentle flow, with something like your hand over the water coming in, to help disperse the water flow is imperative to preserving all your hard work.

Everyone has a way that works for them. I don't believe any one method is correct in fish keeping or planted tanks. Experiment until you find what works for you. This is just what works for me.



APISTOGRAMMAS MY WAY

By Don Zilliox

First published in Some Things Fishy,
Newsletter of the Tropical Fish
Club of Erie County Aquarticles

Apiogramma species are a dwarf cichlid group that inhabits an area from northern South America to the northern parts of Argentina, which includes Brazil, Columbia, Ecuador, Peru and Venezuela. For the most part they inhabit soft water except on the slopes of the Andes Mountains. They are always looking for a place to hide such as caves, crevices and areas of low overhanging plants with a few fallen leaves thrown in. The water temperature is usually between 76 & 78 degrees and mostly has a brownish tint. To keep as display specimens normal tap water is adequate, but for breeding I try to duplicate their natural habitat as

closely as possible. A few years ago I did have some success without changing water conditions but lately have changed my methods. For a group of six or eight young specimens I use a 10 -gallon bare bottom tank. A slate bottom type can be used but you will be unable to "peek" from underneath to see if there are any eggs.

Begin with your regular fish tank water (RO can come later) as many will spawn in regular water. One bubble-up box filter, Java moss/Java fern, a sinking or floating yarn mop AND at least one 3" clay flowerpot for each Apisto must be added. Each pot has a small opening cut into what is normally the top, just

large enough for the male to squeeze through. If all the fish are small fry, cut an opening about the size of your "pinky" finger, which should be about the right size. One note about cutting into clay pots - you must use a hacksaw type blade called a "carbide grit rod saw," as a normal blade which is flat will split the pot if twisted ever so slightly and at all.

Along with the fish, a few Cory cats can be added if so desired to clean up excess food if you overfeed. Make sure there are enough hiding places for everyone, as sometimes things can become a little violent.

Now come the hardest part. Just wait, and wait and wait. If you



APISTOGRAMMAS MY WAY

purchased small fry, this can take almost eight months. Make your weekly water changes and feed live baby brine shrimp daily. My long time breeding adults still get live brine exclusively daily. About once a week they get small portions of frozen brine very sparingly as not to foul the tank water. When a female finally turns a bright yellow with deep black markings, that's a sign telling me there are eggs somewhere. If she stays half in the doorway of the flowerpot, it's a good bet the eggs are inside. At this time you can look from below or if that is not possible, just slowly lift the pot and check that way being careful not to disturb the area too much. If there are eggs I just replace the pot and try to remove all the other fish as quietly as possible. This just ain't easy, so take your time as usually all the others are forced up into a far corner and will return there if you miss them the first time.

If you are lucky and all goes well, fry will appear in about ten days. If she eats the eggs; they most likely were no good to begin with especially with the first spawn. The eggs should be dark blood red in color or they probably are infertile. If they are no good after a few times, now comes the RO water. If you don't have a soft water unit you can purchase some at the supermarket IF they have a machine. Regular bottled water IS NOT soft water and "Hey Culligan Man" is no good either. I usually re-

move all but two inches of water and replace it with the same temperature RO water that brings the ppm's down to about 20. A few degrees colder will make the fish think the spring rains have come and may get an idea to spawn quickly. By adding the RO water, the pH usually drops close to 6, which is ideal. Go through the same process as before and just keep your fingers crossed. I have had many different Apistos go through my fish room but have only been able to get a small number of them to spawn successfully, so as you can see they are not an easy species to work with.

At the last OCA Extravaganza in Cleveland, Ohio I purchased a trio of *Apistogramma gibbiceps* from my good friend "Little John" Wubbolt. I like this fish because of the black diagonal

markings below the lateral line and its lyre tail. The tail is not elongated as much as others, such as *Dicrossus filamentosus*, but can very definitely be noticed.

Anyway most Apistos that I have bred lay from 20 to 50 eggs at the most but one of the females is now leading a spawn of about a hundred small fry around the tank. I didn't think that any Apisto could have that many offspring at one time. To add to my amazement, she is barely 3/4" in length. After spawning 20 or so Apistos I now learn something new. Some have a whole lot of fry! When I purchased my first "Apistogramma" book in 1987 there were 40 species listed. The updated version of the same book in 1994 listed 50 different and now the latest new book, written by Hans Mayland

and Dieter Bork and published in 1997, lists 69 species. As you can see, new Apistos are being found almost daily. Of the 14 different varieties I am working with now, three are not listed anywhere. Oops, I forgot about the Internet. Check through your browsers and club web sites and I'm sure you can find some that just were found last month. Or so it seems. The problem is that if you want the latest, you will pay through the proverbial nose unless you have a contact that can supply you with the newest findings as a trade. Like anything else, everybody wants the latest just to say they have it. Start out with the old standbys and see if you enjoy them first before spending a lot of money just to have something new.



RINELORICARIA HASEMANI

Reprinted from the December 2014 *Finformation*, The Greater Pittsburgh Aquarium Society, Inc. Newsletter

By Roberto Prati



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Rineloricaria hasemani is native to the rivers of northern and central South America. These fish are found in the forest streams along Braganca railroad, Muguary near Belem, Para, Brazil. They are commonly called whiptail catfish because of the long filament that grows out of the tip of the caudal fin that is characteristic of the genus. This genus is by far one of the most species rich of the subfamily Loricariinae, containing about 30 species. On the other hand, it is one of the least resolved genera. In 2008, 14 new species were added to this genus. *Hemiloricaria*, *Fonchiichthys*, and *Leliella* been variably considered synonyms of *Rineloricaria*; these genera were erected to account for differences in sexually dimorphic traits. However, the traits used to diagnose these genera have been thought to be insufficient. The differences between

Hemiloricaria and *Rineloricaria* genera are based on the positions of the males bristles and the top caudal filament on adult *Hemiloricaria* which is absent on *Rineloricaria*.

I was contacted by a fellow friend and club member who was getting rid of his breeding group of *R. hasemani* and asked if I was interested in purchasing them for the price he originally paid. I couldn't pass this up so of course, I said yes. He said he would bring them to the monthly meeting so that gave me a few days to set up a new tank for them.

The tank I chose for this group of fish was a 30gal breeder tank. Since this species doesn't need the height of the tank and uses up more of the actual bottom footprint, a breeder tank is perfect for them. The tank was

painted black on the bottom, back, and the two sides. I used a Poret® foam filter across the entire left side of the tank with 2 jet filters running in the tank. I added play sand as the substrate and a big piece of driftwood which looks like a stump. I then laid ceramic breeding tubes in the sand and around the roots that touched the ground. I laid a few flat stones on top of the tubes and on the roots and laid more breeding tubes on top of that. The only plants in the tank are two large Anubias.

I brought the fish home from the meeting and they were acclimated to the tank you see above. That was the final look I wanted for these guys. I kept it simple just in case I couldn't get them to breed and so I could rearrange the layout. This is the first time I attempted to keep and breed whiptails so I wasn't

really sure of what I was doing other than the little info I was able to find about them online and from a few books I have. I fed the fish the following morning and was shocked to see they were not interested in the live baby brine I had put into the tank. The group didn't move at all and just sat still where they had been hiding in the dark spots of the tank and where a few others had buried themselves in the sand. I didn't know they did this until I spotted a few eyeballs peeking out of the sand at me as you see in the two photos below.

The fish left the food lying throughout the tank until that night when I turned the tank lights off. I snuck in an hour afterwards and noticed everyone was out cruising around the sand scavenging food. Once ready to hide, they either swim



RINELORICARIA HASEMANI



into a dark spot or hover over the sand and start to shake back and forth until their body slowly disappears in the sand. It's very neat to watch this behavior which I am sure they do in nature in order to hide and to avoid predators. I continued to feed the fish every night before turning the lights off. I fed them baby brine shrimp, frozen blood-worms, frozen glass worm, and frozen daphnia. Since these fish are omnivores, I also would drop in spirulina pellets and veggie pellets. Each morning I would get my flash light and light up the breeding tubes to see if

they had spawned.

Finally one morning I came down and found that the group had finally spawned. In the photo above you can clearly see the eggs in both breeding tubes as the male to the left is now caring for eggs and in the breeding tube to the right the male and female are spawning. I'd been told by others who had spawned them that the male guards and hatches the eggs and that I would have to hurry and catch the free swimming fry before the other adults ate them. So this made me think about how I

could save the fry without disturbing the father in the tube. So I decided to use a Marina Hang-On breeder box in the tank and placed the entire breeding tube with the male and eggs inside. This lets the male hatch the eggs without being bothered and, if and when the fry leave the tube, they would not be eaten by the other adults.

Photo below on left is of the eggs on Day 1, the photo below on the right is of Day 3 with the developing eggs; you can see their eyeballs. The photo above to the left is of the eggs on Day

4 fully developed and ready to hatch. The photo above to the right you can see the eggs on Day 5; one fry had hatched and the rest are ready to hatch. The eggs are stuck to the tubes and are difficult to remove without bursting them. If an egg funguses, it actually becomes a thick, creamy, sticky gel-like substance and remains stuck to the tube until you scrape it off. If not removed, it will continue to spread among all the fertile eggs it comes in contact with and fungus them as well. Once hatched, the fry would stick to the walls of the breeder box and



RINELORICARIA HASEMANI



slowly absorb the egg sac. It usually took them about 3 days until the egg sac was gone and they were able to eat microworms, live baby brine and Sera micron. The fry had long slender bodies and were large for being just hatched. The fry are just like the parents in that

they eat at nighttime and love to hide. After the first few weeks I started to feed the fry the same food as the adults. Fry did not seem to be aggressive towards one another. The fry seem to be very hardy and grew quickly. Photos below are of some of the fry at one month old.

Since breeding these fish I have bought another species of whiptail and can't wait to get them to adult size to attempt to breed them as well. These are truly a neat fish and there are so many species that you won't ever be bored with them. I was always into cichlids and I still am but

something about catfish is starting to pull me in towards really being a catfish person. I think it's because there are so many types of catfish and they breed so many different ways, it just sparks an interest in me to learn more about all the different types of catfish.



FISHES AS DISHES

PATRICK A. TOSIE, SR.

Grilled Fish Skewers

Ingredients:

1 pound thick firm white fish fillets, cut into 1 inch cubes (such as tilapia or cod)
½ onion very finely chopped
2 garlic cloves, finely chopped
2 tablespoons fresh coriander, chopped
2 tablespoons flat leaf parsley, chopped
½ teaspoon paprika
¼ teaspoon cayenne pepper
1 pinch saffron
1 teaspoon salt
2 tablespoons olive oil
1 tablespoon lemon juice



Directions:

In a bowl mix all ingredients apart from the fish. Add the fish to the marinade and make sure it is coated all over. Leave to marinate for at least two hours, stirring from time to time. Divide the fish onto four skewers. (Tip: If you use bamboo ones soak them in water beforehand to stop them from burning). Place under a hot grill or onto the BBQ and leave for about 10 minutes or until cooked through. Turn only once.

Total Time: 2 hours and 20 minutes (Preparation: 2 hours 10 minutes, Cook: 10 minutes) Yields 4 servings



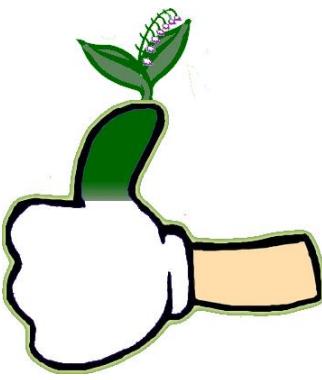
EAT MORE



FISH



November/December HAP Report by Mike Hellweg

Aquarist	Species	Common Name	Key	Points	Total	Note
Debbie Sultan & Tom Corradini	<i>Aponogeton ulvaceus</i>		IB	10	80	
	<i>Cryptocoryne wendtii wendtii</i>	<i>Cryptocoryne wendtii wendtii</i>	V	15		
	<i>Lemna minor</i>	Dwarf Duckweed	V	5		
	<i>Nymphaea lotus zenkerii</i>	Red Tiger Lotus	V	20		
	<i>Rotala rotundifolia colorata</i>		V	15		
Holly Paoni Wise & Kevin Wise	<i>Rotala rotundifolia</i>		V	15		
	<i>Anubias afzelli frazeri</i>	Frazer's Anubias	V	15	1115	
	<i>Anubias barteri nana "Gold"</i>	Golden Dwarf Anubias	V	15		MASI First!
	<i>Anubias barteri nana Long and Wavy</i>	Long & Wavy Dwarf Anubias	V	15		MASI First!
	<i>Anubias barteri nana "petite"</i>	Petite Anubias	V	15		
	<i>Anubias gigantea</i>	Giant Anubias	V	15		
	<i>Anubias hastifolia</i>	Arrowhead Anubias	V	15		
	<i>Bolbitis sp. mini</i>	Mini African Water Fern	V	10		MASI First!
	<i>Cabomba caroliniana</i>	Fanwort	V	10		
	<i>Cabomba furcata</i>	Brazilian Fanwort	V	10		
	<i>Cardimine lyrata</i>	Chinese Water Ivy	V	10		
	<i>Ceratophyllum submersum</i>	Narrow leaf Hornwort	V	5		
	<i>Ceratopteris silaquosa</i>	Indian Water Fern	V	5		
	<i>Cryptocoryne spiralis</i>		V	15		
	<i>Cryptocoryne walkeri</i>		V	15		
	<i>Echinodorus sp. Indian Red</i>	Indian Red Sword	V	15		
	<i>Echinodorus sp. Ozelot</i>	Ozelot Sword	V	15		
	<i>Echinodorus sp. Rubin</i>	Red Rubin Sword	V	15		
	<i>Echinodorus quadricostatus</i>	Broadleaf Dwarf Chain Sword	V	15		
	<i>Fontinalis antipyretica</i>	Willow Moss	V	5		
	<i>Heteranthera zosterifolia</i>	Stargrass	V	15		
	<i>Hygrophila difformis</i>	Water Wisteria	V	5		
	<i>Hygroryza aristata</i>	Asian Water Grass	V	5		
	<i>Lilaeopsis sp. broadleaf</i>	Broadleaf Micro Sword	V	10		
	<i>Ludwigia glandulosa peruvensis</i>	Red Star Ludwigia	V	10		
	<i>Lysimachia nummularia</i>	Moneywort	V	10		
	<i>Microsorum pteropus tropica</i>	Tropica Java Fern	V	10		
	<i>Myriophyllum heterophyllum</i>	Red Foxtail	V	10		
	<i>Nuphar luteum</i>	Cape Fear Spatterdock	V	20		
	<i>Nymphoides cristatum</i>	Variegated Snowflake	V	20		
	<i>Pistia stratiotes</i>	Water Lettuce	V	5		
	<i>Pogostemon helferi downoi</i>		V	15		

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

November/December HAP Report by Mike Hellweg

Aquarist	Species	Common Name	Key	Points	Total	Note
Mike Huber	Anubias afzelli		V	15	425	
	Anubias congensis	Congo Anubias	V	15		
	Echinodoras sp Kleiner Prinz	Kleiner Prinz Sword	V	15		
	Helianthium bolivianum vesuvius	Vesuvius Sword	V	15		
	Hydrocotyle leucocephala	Brazilian Pennywort	V	10		
	Hygrophila corymbosa angustifolia	Willow Leaf Hygro	V	5		
	Myriophyllum mattogrossense	Southern Milfoil	V	10		
	Nesea triflora		V	15		
	Nymphaea daubenyana	Dauben Water Lily	V	20		
	Proserpinaca palustris	Mermaid Weed	V	15		
	Anubias barteri barteri	Common Anubias	IB	20		

2014 HAP Year End Totals by Mike Hellweg

190 entries from 19 entrants represent 145 different species from 35 different families

3 Outdoor Blooms

5 Indoor Blooms

0 Seed Reproductions

182 Vegetative Reproductions

The most widely propagated species in 2014 was Anubias barteri - with 12 submissions from 8 different variants.

The most frequently submitted genus in 2014 was Anubias - with 20 submissions from 6 different species.



Earliest known
Exalted Grand Master

Participant	2014 Points	2014 Entries	Total Points	Total Species	Indoor Bloom	Outdoor Bloom	Seed	Rank	Award Status
Andy Walker	15	1	690	49	9	0	1	Master	
Bruce Mayhew	20	2	190	22	1	2	0	Advanced	
Chuck Bremer	185	24	185	24	0	0	0	General, Advanced	To be presented
Debbie Sultan/Tom Corradini	80	6	80	6	1	0	0	General, Advanced	To be presented
Derek Walker	25	2	3270	247	20	7	13	Exalted Grand Master	
Dwayne Peters	15	1	180	20	1	0	0	Advanced	
Evan Wright	155	15	300	26	0	0	0	Senior	To be presented
Gary Lange	45	3	1610	124	11	13	2	Grand Master	
Holly Paoni Wise/Kevin Wise	985	80	1115	95	0	0	0	Senior	To be presented
Janina Mera	45	4	45	4	0	0	0	Novice	To be presented
Jim Mueller	20	3	155	16	1	2	0	Advanced	
John D Bloch	35	2	60	5	0	0	0	General	
John Van Asch	15	2	780	66	5	24	6	Grand Master	
Mike Hellweg	95	9	3410	249	37	15	15	Exalted Grand Master	
Mike Huber	270	21	425	39	1	1	0	Senior	
Nick Scarlatis	45	4	145	16	0	0	0	Advanced	
Pat Tosie	50	4	380	40	2	7	0	Senior	
Steve & Kathy Deutsch	20	2	70	9	0	0	0	General	To be presented
Tony McMillan	50	5	425	40	0	2	0	Senior	

Breeders Award Program by Steve Edie

November 2014	Species	Common Name	Points	Bonus	CARES	Total
Mike Hellweg	<i>Amphilophus citrinellus</i>	Midas Cichlid	10			6194
	<i>Gambusia holbrooki</i> "Flamingo Park" *	Black Marble Mosquitofish	5	5		6204
	<i>Poecilia latipinna</i> "Flamingo Park" *	Green Sailfin Molly	5	5		6214
	<i>Poecilia obscura</i> "La Sieva River, Trinidad" *	Hidden Guppy	5	5		6224
	<i>Xenotoca melanosoma</i> "Achacales, Rio Ayuquila" *@	Black Spot Jewel Goodeid	15	5	15	6259
Steven Hoffman	<i>Xiphophorus xiphidium</i>	Spike Tail Platy	5			150
Mike Huber	" <i>Psammochromis</i> " <i>riponianus</i> @		10		10	213
	<i>Pseudotropheus</i> sp. "Acei"	Acei	10			223
	<i>Xenotoca melanosoma</i> @		15		15	253
Jerry Jost	<i>Aspidoras</i> sp. "C118" *		15	5		2202
	<i>Corydoras</i> sp. "CW062" *		10	5		2217
Cory Koch	<i>Cryptoheros nanoluteus</i> #@		0		10	3758
	<i>Haplochromis</i> sp. "Ruby" @		10		10	3778
	<i>Pundamilia nyerereri</i> "Python Island" @		10		10	3798
	<i>Rocio octofasciata</i> "Electric Blue" ^		0	1		3799
Nick Scarlatis	<i>Altolamprologus calvus</i> "Black Zambia" *		15	5		680
	<i>Ancistrus</i> sp. "Albino Bristlenose"		10			690
	<i>Haplochromis</i> sp. "Ruby Green" @		10		10	710
	<i>Pseudotropheus socolofi</i>		10			720
	<i>Tropheus moorii</i> "Chilanga Red" *		15	5		740
Debbie Sultan &	<i>Aulonacara ethelwynnae</i> *		10	5		395
Tom Corradini	<i>Aulonacara maylandi</i> @	Sulfurhead Peacock	10		10	415
Pat Tosie	<i>Otopharynx lithobates</i> "Z-Rocks"		10			4590
Evan Wright	<i>Pethia conchonius</i>	Longfin Rosy Barb	10			170
December 2014	Species	Common Name	Points	Bonus	CARES	Total
Cory Koch	<i>Ataeniobus toweri</i> @	Bluetail Splitfin	15		15	3829
	<i>Neochromis omnicaerulus</i> "Makobe Island" #@		0		10	3839
	<i>Pseudotropheus demasoni</i> @		10		10	3859
	<i>Zoogoneticus tequila</i> "Rio Teuchitlan" @	Tequila Splitfin	15		15	3889
Nick Scarlatis	<i>Tropheus moorii</i> "Chaitika Blue Rainbow" *		15	5		760
Debbie Sultan &	<i>Limia nigrofasciata</i>	Humpback Limia	5			420
Tom Corradini	<i>Nannostomus beckfordi</i>	Beckford's Pencilfish	20			440
Pat Tosie	<i>Girardinichthys multiradiatus</i> "San Miguel Spring" *@	Golden Sailfin Goodeid	15	5	15	4625

* = 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>

Classifieds

Buy/Sell	Member	Item	Bid/Asked	Contact
Sell	Jim Miller	Bloodworms and brine shrimp. Brine Shrimp eggs 16 oz. can.		314-638-1134
Sell	Charles Harrison	Thiosulfate crystals (Chlorine Remover) - half pound	\$3.00	
		OTO double strength Chlorine/Chloramine test kits - 4 ounce	\$12.50	(314) 894-9761
		Flubendazole, 10% powder 25 grams	\$20.00	charles@inkmkr.com
		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	
Buy	Mike	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	Free	636-240-2443

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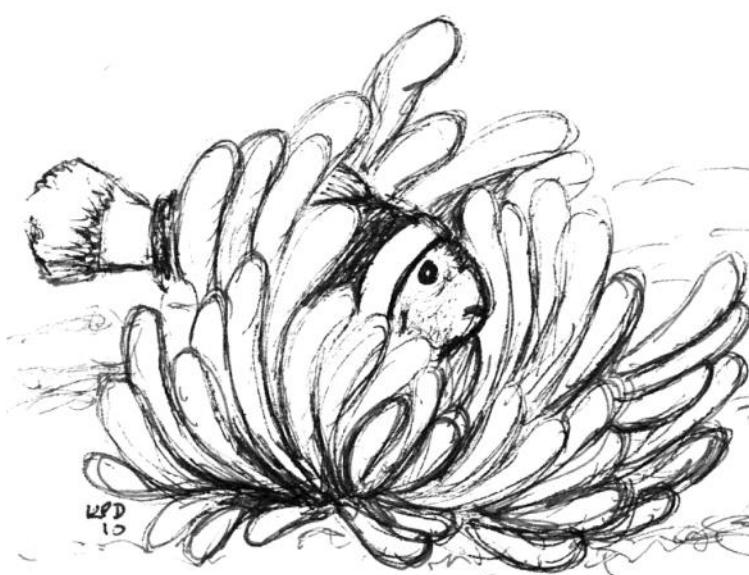
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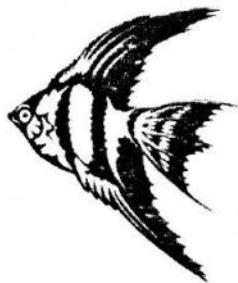
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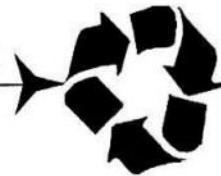
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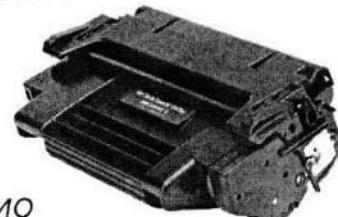
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