

NOVEMBER/DECEMBER 2016

B&W Printed \$3 Members: / \$5 Non-members

v42-N6

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THE DARTER

(ISSN 0192-7833) is published six times a year by the Missouri Aquarium Society, Inc., 1813 Locks Mill Drive, Fenton, MO 63026-2662.

Periodicals Postage Rates paid at Fenton, MO. This publication is free to members of the Missouri Aquarium Society. and other qualified requesters as determined by the publisher. Subscription requests can be sent to: Missouri Aquarium Society, Inc., 1813 Locks Mill Drive, Fenton, MO 63026-2662 or to editor@missouriaquariumsociety.com.

POSTMASTER: Please send all

address changes to Missouri Aquarium Society, Inc., P.O. Box 1682 Maryland Heights, MO 63043-1682. Please allow 6-8 weeks for change of address. Include the old address as well as new - enclosing, if possible, an address label from a recent issue.

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

The editor reserves the right to edit any article for length, clarity, or content.. Photos are provided by the Author unless otherwise indicated.

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Send electronic versions to editor@missouriaquariumsociety.com

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Join or renew membership at any meeting, most club events, by PayPal from the MASI Website's Membership Page or by contacting Ron Huck, membership chair, at 314-481-2915.



Cover -
Bob Guarding Fry
By Debbie Sultan



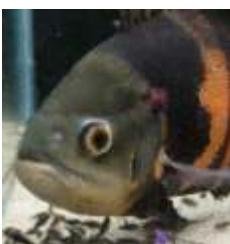
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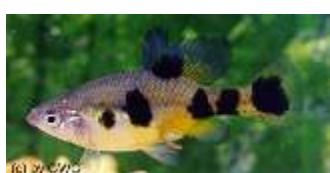
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This is the last Darter of 2016



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FROM THE PRESIDENT'S TANK



Pat Tosie

"It's Getting Better All The Time!"

just like the Books & Dunn and Beatles songs say!

What a Fantastic few months it has been for MASI. World Famous Ian Fuller put on a great program on Corydoras and it was a smashing success, the Swap meet had a super turnout, thanks to Kevin and all his helpers, the Super Bowl was great thanks to Gary's guidance, Mike headed up the last Auction and with all his volunteers we had

another super time that everyone enjoyed and at our next meeting, we have another wonderful speaker that Gary was able to schedule for us, Things are going great!!

Mark Theby has agreed to take over the Swap Meet, thank you Mark and thank s go out to Kevin for heading it up this year and making it such a success.

What else do you want to see in 2017? We have the **American Liverbearer Convention** that we will be hosting in May and will need some helpers to assist Convention Chairman Derek Walker to bring us another successful time and the weekend before it Gary Lange will be heading up **our own Convention** right here, so 2 weekends back to back will make it a little

tough on some people, but I am really looking forward to these activities.

Aren't you? **How can you help?** Ask Derek and Gary what you can do to help them bring a successful convention for our club. I will be there both weekends, can you make it?

Our Darter looks like something you would see on the newsstands, be sure to get included and write an article to be published- who knows, you could even **win \$100** on our yearly writers award!

Participate and make our club strong.

Keep looking below water....

Looking for someplace to get involved? See a Club Program area you are interested in? We have several OPEN positions listed on page 2, any of the Program areas can always use extra help and input and Ed Millinger is especially looking for someone to train as the next Points Tabulator.

Ask someone how you can help. As a not for profit and Volunteer organization we can't exist or improve without your input and help.

MASI Challenge

2016 isn't over with a ways to go toward our 2016 MASI Challenge Goal. Please bring items for auction to the November 17th meeting or otherwise donate through the Treasurer.

MASI efforts are greatly appreciated! The Editor is holding positive result feedback from the *Zoogonequis tequila* Reintroduction Project in Mexico and the Running River, Australia, Rainbow project we have sponsored recently for publication in future Darters.

After your input, the council selected the **Stuart M Grant Fund in Africa as the 2017 MASI Challenge recipient.**

Find more information about it here:

<http://www.cichlidpress.com/smgefund/>
<http://cichlidpress.com/smgefund/smgefand29.html>

Time to renew 2017's
MASI Membership.

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**Stuart M Grant
Fund**

FROM THE EDITOR

Chuck Bremer

Look for some changes in the next Darter!

If you haven't realized it by now **the primary Darter delivery method in 2017 will be EMAILED as PDF**. If we have your correct email you will now be getting the Darter on time. Printed copies will be available at the meeting immediately following the email date and at most club functions. Yearly MASI Membership is now again uniformly \$15 for everyone and includes this electronic Darter. If you want a paper copy each issue will be made available to members for \$3 and non-members for \$5. **This November 2016 issue is the last automatically US Mail copy.**

I have spent most of the past year incorporating electronic links into the Darter so it is the path to much more information than the printed page. Such things as links to reference materials; YouTube videos; hot links to Sponsors, Conventions and neighboring clubs; imbedded emails which initiate email contact; etc. are now imbedded in the issue. These cannot be accessed easily from the printed version. Several PDF readers work but if you don't already have one try using a recent version of Adobe Acrobat Reader DC, available here:

<https://get.adobe.com/reader/>



I have also tried to optimize somewhat the reading process for electronic devices. Columns are a bit fewer, font size is slightly larger and there

are links that will move you around within the publication instantly without having to move page by page. Colored underlined text usually indicates a hotlink within the publication or to an internet location. Since reading methods are often different for electronic vs paper issues, and to get our LFS advertisers and sponsors more views we will begin incorporating LFS ads where they fit within the publication rather than all accumulated at the end.

 **Go to Index**



In the past the Darter has had to be optimized for B&W printing, color was just not feasible. One readily available commercial printing source MASI has used is \$4.45 per copy in B&W or \$23.65 for color. A Home color printing can also be very expensive and is often fraught with problems. This has meant less flexibility in color schemes and often poorer quantity and quality of photos and graphics. Things ultimately were going to be either Black or White on the printed page and subtle colors just don't print well. Now you will begin to see many more varied color schemes and maybe some improvement in photo quantity. Already this issue is loaded with photos.

Many members still have rural or low bandwidth Internet Service Providers (ISP) or data limits on their mobile devices so we won't get too wild on overall size and will try to keep the final PDF attachment at around 6 MB. This means that photos in the copy you receive may be lower resolution than your device might otherwise handle. If you want a higher resolution *but a bigger size file*, please contact me for it. If we get enough requests we can look at alternative delivery methods.

Maybe you want to treat yourself to a mobile device this Christmas if you've been reading your Darter in B&W printed version. Last year capable email and PDF reader devices such as the Amazon Fire were available for as low as \$35-\$50. FYI, things will read better on a 10" device but with pinch to zoom smaller ones can also work. I currently use an iPad mini to read mine. **You might suggest it to someone for your Christmas list...**



To keep improving the Darter for you I need feedback. Unless I hear differently I must presume you are happy with what you find. Praise is always welcome but if you have a suggestion for change or improvement it can offer additional possibilities and correct misconceptions I may have.

Leave your mark on the Darter by sending comments and suggestions to the email below...clicking it should open your email program... What could be easier?



(P.S.: Verbal communication at a MASI meeting also works!)

Send Feedback and Letters to the Editor to: editor@missouriaquariumsociety.com

September Darter OOPS!: BAP Report- August submissions were incorrectly labeled as June. Let the editor know if you want another copy of that page.

Time to renew 2017's MASI Membership.

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MASI General Meeting - Thursday, Nov 17th!!

Greg Sage - Livebearers: No Longer Child's Play

Setting the mood for the ALA convention!



Dinner with the Speaker at Bandana's, 6:00 PM, Thursday. Please let Gary Know if you plan to attend. gwlange@sbcglobal.net



7:30 PM Dorsett Village Church; 2240 Bennington Place, Maryland Heights, MO



Other MASI Programs

Christmas party... December 15!

I would like for everyone to sign up and let me know in advance what they plan to bring and will have a sign up sheet at the November meeting for that purpose. I considered making a menu and then having everyone to sign up to bring something off of that list, but I also like the idea of certain people bringing something that everyone has come to expect or that they are really good at making so will more than likely will just stick with a regular sign up sheet.

Thank you!

Lora Watson



Santa will be There!

Did you miss this one?



11/17/2016	General Meeting	Nov	Dorsett Village Church	7:30	Greg Sage
12/3/2016	Council Meeting	Nov	Home of Charles Harrison	7:30	FORC
12/15/2016	General Meeting	Dec	Dorsett Village Church	7:30	Christmas Party
1/19/2017	Council Meeting	Dec	Dorsett Village Church	6:45	
1/19/2017	General Meeting	Jan	Dorsett Village Church	7:30	Watch the O-Fish-L for additional information.
1/28/2017	Council Meeting	Jan	Home of Gary Lange	7:30	

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MEETING REPORT

MISC Contributors



Thank the Sponsors!!

Winners of the September Raffle

Angela Hellweg won a Light from Coralife

&

Steve Edie won a Gift Certificate from Tropical World Pets

Congratulations!!

October Bowl Show - Chris Mohrle

Place	Aquatic Plants	Keeper	Open Class	Keeper
1	Spiral Vallisneria	Jim Mueller	Boraras Maculatus	Chuck Bremer
2	Anubias Petite	Chuck Bremer	Corydoras Habrosus	Chuck Bremer
3	Bolbitus Heteroclita	Jim Mueller	Corydoras Pygmaeus	Chuck Bremer

Come on Folks...give these guys some competition!!



SHOW CHAIRMAN

Gary Lange

Thanks for the Excellent SuperBowl!!

Everyone gets a BIG PAT ON THE BACK for the entries into the Superbowl! See the results of this great effort on the next page!! This was one of the larger

Superbowls in recent memory!

Great practice for the Spring Convention!

Mark that on your calendar now, earn the Banquet points with sales Items 19 & 20 on the February Auction, and tell everyone you are busy Convention weekend. Volunteer, enter fish in the show, hang out with fellow Fish Nuts, listen to and **talk shop with the speakers**. **Attend the Banquet to receive your awards!!**



An excellent Banquet speaker is locked in and some Fabulous educational speakers are on deck. We expect to see all members on Saturday, each with a couple of friends to introduce to the Excellent Fish Keeping information.

Got Your Three fish for the Show Classes you plan to enter? In the near future we will be listing Classes for the show. How many fish are you going to enter?

GARY



SuperBowl Results

**Less than 195 days till the
MASI Spring Convention &
Workshop**

April 28th - 30th, 2017

Got you 3 Fish picked out?

**Time to renew 2017's
MASI Membership.**

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2016 SuperBowl Results



You and Your Fish are Stars!



Best Junior Entry Oranda Goldfish River Kinder-Russell

People's Choice Blue Gularis Al Grudzinski

Best in Show Red tailed Shark Larry Allbright

1. Old World Cichlid - 4 Entries

Julidochromis regani	Jack Heller	1st
Chromidotilapia guntheri	Pat Tosie	2nd
Chromidotilapia guntheri	Pat Tosie	3rd

6. Livebearer: Normal or Wild-type Finnage - 8 Entries

Ilyonon furcidens	Pat Tosie	1st
Red Swordtail	Jim Miller	2nd
Xiphophorus helleri "Twinbar Marigold"	Pat Tosie	3rd

2. New World Cichlid - 5 Entries

Aistogramma borelli	Jack Heller	1st
Aistogramma hongsloi "gold"	Pat Tosie	2nd
Aequidens metae	Pat Tosie	3rd

7. Egglayers: - 11 Entries

Cyprinids: Barbs, Danios, Rasboras, Minnows, Goldfish; Characins: Tetras, Pencilfish, Piranhas, Pacu, Silver Dollars, etc.	Daniell Kinder	1st
Ranchu goldfish	Debbie Sultan & Tom Corradini	2nd
Nematobrycon amphioxus – Black Emperor tetra	Gary Lange	3rd
Tanichthys thacbaensis (Vietnam white cloud)		

3. Rainbowfish - 6 Entries

Melanotaenia lacustris	Charlie Hoppe	1st
Australian rainbow	Ron Huck	2nd
Melanotaenia praecox "Pagai"	Gary Lange	3rd

8. Eggayers: - 13 Entries

Any other type	Labeo Bicolor – Red-tail shark	Larry Albright	1st
Betta splendens, Crowntail	Al Grudzinski	2nd	
Betta splendens - dragon scale male	Pat Tosie	3rd	

4. Killifish - 7 Entries

Fundulopanchax sjestedti – blue gularis	Al Grudzinski	1st
Fundulopanchax gardneri "Makurdi	Al Grudzinski	2nd
Fundulopanchax greseni – Takwai	Jack Heller	3rd

9. Catfish: - 5 Entries

Corydoras, Aspidoras, Brochis, Scleromystax and relatives	Jim Miller	1st
Corydoras robustus	Julie Keim	2nd
Corydoras aeneus	Chuck Bremer	3rd

5. Livebearer: Fancy Finnage - 11 Entries

Sail fin swordtail	Dwayne Peters	1st
Red Sailfin Swordtail	Larry Allbright	2nd
Panda molly female	Charlie Hoppe	3rd

10. Catfish: - 2 Entries

All other	Debbie Sultan & Tom Corradini	1st
Bunocephalus sp "Banjo catfish"	Al Grudzinski	2nd

Can you predict the 2016 Bowl Show Award winner using this and 2016's Show Me Fish Darter eSpecial? See the rules in the [MASI Handbook from our website!](#)





SWAP CHAIRMAN

Kevin Wise

Another MASI Swap has come and gone, the turn out was great for the early Bird, with almost 100 people walking in the door in just a few minutes, that was up from last year. The selection from our vendors was really nice with everything from books to tanks and a great selection of fish, shrimp, and plants. The vendors themselves, all were very happy, the turn out after the early bird was slower then one would have liked, but the end result was par with past swaps.

I would like to thank everyone who helped out at the swap, without you, a show like this can not take place, everyone needs to step up and help, and that is what happened, so I would like to thank all of you for your hard work, and time, in helping me put together another successful show.

Next year Mark Theby is stepping up to take over as Swap chairman, so I hope he gets the same help that I did, I know he will do a great job, we all

just need to help support him in the 2017 Masi Swap.

The Raffle prize of a 40 gal Breeder went to Mark Theby, congratulations on winning a great tank Mark.

THANK YOU to all that came to the 2016 Masi Swap, with out you, no matter the vendors that come, or how big a show we put on, the event is nothing, and to all the vendors that came and sold, **THANK YOU**, I hope everyone had a great time, so till next year, enjoy our hobby.

-Kevin

2016 SWAP Raffle Winners!



**Save the Date for 2017:
Oct 1 - St Louis: MASI Swap Meet**



Sunday
Oct 1
2017



2016 MASI SWAP MEET

Thanks for Supporting our Vendors
We Want them Back Next Year!



2016 Partial List of Vendors

Carl Kling, Eric Schuepfer, Doug Carrell, Carla McCurdy, Mike Misuraco, Warren Crabtree, Steve Schreiber:-FISHOP, Dave Sielaff, Mike Hellweg- Exotic Aquatics, Mike Schadle- The Fish Factory Books, Mark Huffman:- Mark of Excellence Aquatics, John Arthur - Arthur Aquatics, Michael Gray, Eric Riley- Rare Cichlids, Jim Lovins, Darek Walker, Gary Lange, Chis Mohrle, Bob & Lora Watson, Jeremy Goodchild, etc....





ALA CHAIRMAN

Derek Walker

ALA 2017 ANNUAL CONVENTION



We'll All be There!



Dr Jim
Alderson
IFGA
Guppies



Dr Lyons
GWG &
Cichlids



Mike Hellweg
Shipping

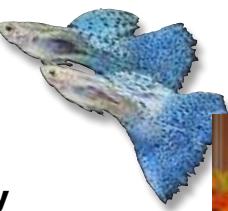
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Shelby
Bush
Segrest



Les Wilson
Filtration



Gene
Anderson
Fancys

Rusty
Wessel
Livebearers

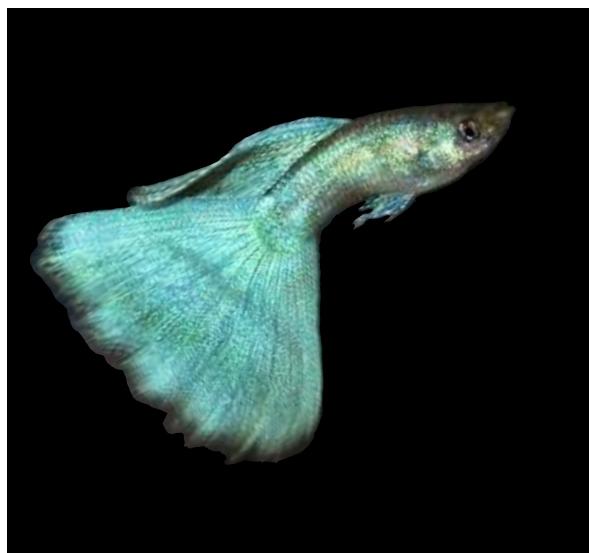
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Early for
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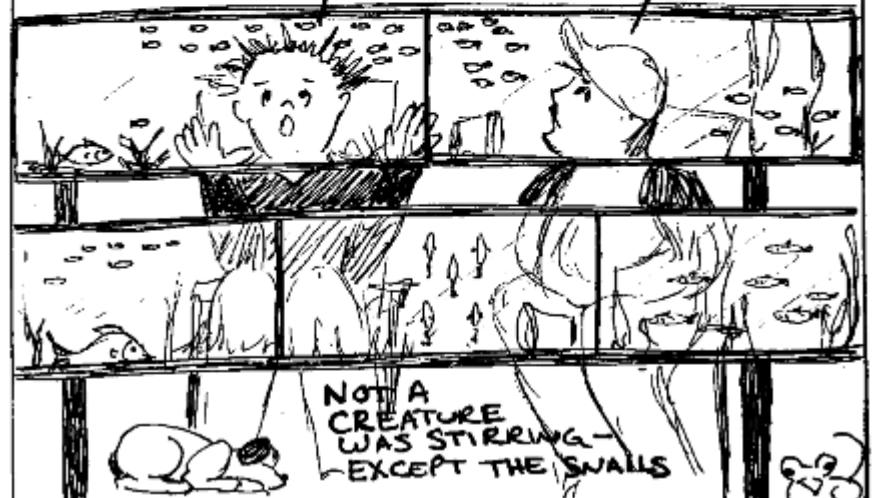


The Old FishHead

K. Deitsch Nov. 2016

TWO 20 POINT
SPAWNS OF
15 FRY EACH!
MERRY CHRISTMAS!
DONE GOOD,
BUD.

IT'S A
CHRISTMAS
MIRACLE!



MASI AUCTION MESSAGE



Mike Hellweg

Thank you everyone for helping to make this one of the best auction years ever. Our auctions are nothing unless you turn out, and you have turned out. We've upped our average sale price by almost \$3 per item, and we've upped our turnout by nearly 20%! Great job, everyone! I hope you will continue to help us grow in the new year.

Our auction dates for 2017 are **February 12, April 30, August 6, and**

November 12. Write them on your calendars now!

Don't forget, you can **EARN A FREE ANNUAL BANQUET TICKET** by selling items 19 and 20 on your seller sheet. Many members already come close to paying for their entire Spring Banquet ticket. The Winter auction is yet to go, so you still have a chance to donate and hopefully come close to covering your ticket price if your items simply sell for close to our average item price.

Always be sure to **Thank Chuck and the guys from Tropical World Pets** for supplying the raffle tank. Not many shops in the country can or will do that! Having not only the long-term support of TWP, but other shops as well is a huge bonus for our members! Make sure you let them know you are a MASI

member and please patronize them as they support us!

At the upcoming annual Winter auction we will once again have three pieces of original artwork from nature artist Sam Scalz up for auction. He donated them to MASI and the proceeds will go to the MASI Challenge. They will be sold at 2:30 pm. This will be the same artwork that was supposed to be sold at the Fall Auction but was not delivered to the Auction venue as anticipated. We have it in hand.

Mark your calendars! The Winter Auction is coming up fast on February 12, 2017.

Mike

auction@missouriaquariumsociety.com

**Dennis Dielschneider
was the Happy
Winner of the 75
gallon tank from
Tropical World Pets!**

**Thanks to Dennis and
to TWP!!**



**Next
Time!**

**Time to renew 2017's
MASI Membership.**

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Meet MASi Fishy Folk - Ron Huck



- **Family members?** There are three members to my family, including my wife, Jeanette, and our daughter, Elissa.



Ron in his fishroom beside the newly conquered Yellow Labs and his next challenge, the *Julidochromis marleri*.

The Face of MASi to new members for over 10 years!

- **Years keeping fish?** I have been keeping fish for 52 years.
- **What was in your first tank?** My first aquarium contained Zebra Danios.
- **How many tanks do you have set up right now?** I have thirty five tanks set up right now.
- **Favorite fish as a pet?** My favorite fish as a pet are marble angelfish.
- **Your dream fish?** My dream fish are black veiltail angelfish.

- **Your dream tank?** My dream tank is a 75 gallon planted tank with angelfish.
- **Your realistic dream tank?** My realistic dream tank would be a 55 gallon planted tank with black veiltail angelfish.
- **Your latest fish related accomplishment?** I was able to breed yellow labs.
- **Your latest goal?** My latest goal is to breed *Julidochromis marleri*.
- **Other pets?** I have a dog and cat.
- **Anything else about you or the hobby you want us to know?**

“I enjoy meeting people and being a member of the Missouri Aquarium Society.”



Ron's Pearl Gourami won Best Anabantoid and his Congo Tetra won Best Fish in the 2016 Show



Fish Room Efficiency

Part 2 - Three Great Fish Foods

Jack Heller

FISH FEEDING, LIKE the rest of my fish room work, is a process where I aim for efficiency while, at the same time, providing the best possible food to my fish.

I do maintain several live foods from my fry and juvenal fish but my primary foods for adult fish are baby brine shrimp and prepared frozen food. I also feed my adult tanks black worms in lieu of frozen food every second night. In addition, I periodically feed daphnia to my breeding pairs and my fry. Baby brine shrimp, prepared frozen food and daphnia are the foods I would like to discuss here.

I hatch my baby brine shrimp in a shrimp hatchery consisting of two-liter plastic soda bottles, a ten gallon tank with a 50 watt heater, air tubing for bubbling, and an overhead light that I leave on 24/7. I make each shrimp container from two 2 liter soda bottles. I



Baby Brine Shrimp

cut off the base of one bottle at a high enough level to hold the second bottle securely when the narrow end on the second bottle, with its cap, is placed into the base. I cut off the bottom of the second bottle before setting it in the base, and then cut off the top of the first bottle far enough down that it fits securely over the second bottle. I leave the cap on the top of the second bottle and drill a hole in the cap large enough to accommodate a standard piece of rigid air tubing that is long enough to extend almost to the bottom of the container. To the rigid tubing, I then attach flexible air tubing from the air supply in order to bubble the

1. Baby Brine Shrimp
2. Prepared Frozen Foods
3. Daphnia

water with a heavy air flow. I place one of these containers in the ten gallon tank that serves as the temperature bath, and heat the water to 80 degrees F. with a 50 watt heater.

I add 1.5 liters of warm tap water to the hatchery and then add two tablespoons of non-iodized table salt, one teaspoon of Epsom salt and three drops of non-scented bleach to the hatchery, start bubbling, and add 1/2 teaspoon of brine shrimp eggs to the solution. I let the solution bubble for twenty four hours under a constant light, and then take the hatchery out of the heat bath and place it on a rack where I shine a light on the bottom of the rack until the shrimp accumulate at the bottom.

Baby Brine Shrimp Recipe

- 1.5 Liters warm tap water
- 2 Tbs non-iodized table salt
- 1 tsp Epsom salt
- 3 drops non-scented bleach
- 1/2 tsp Brine Shrimp Eggs

Bubble for 24 hours at 80 F

I then siphon the shrimp into a container and run it through a brine shrimp net. I place the drained shrimp into a cup of fresh tap water and allow the shrimp to rise to the top of the container before carefully decanting into a second container. The shells of the eggs settle to the bottom of the first container, and, if I carefully pour off the shrimp, I get very few shells into the second container. I



Frozen Foods



At the WAKO killifish show this past weekend, the biggest killie show in the country, our own Jack Heller took best in show out of over 300 entries with one of his Chromaphyosemion lugens! (Pic by Jeff Wasley)



then refill the first container with tank water and allow it to sit until the remaining shrimp rise off the bottom of the container and can be decanted into the second container.

This hatching technique was developed by Mike Hellweg and Gary Lange with extensive experimentation and has worked consistently for a number of years. After harvesting the baby brine shrimp, I wash the container and set up the hatchery for next evening's hatch. I then squirt the shrimp into each of my tanks and then move on to the next round of feeding with either my frozen prepared food or black worms.

I prepare my frozen food once a week so that the only thing I need to do on frozen food night is defrost a bar of the food by placing it in a net and running it under hot water for a minute. I then dump it into a container of cold tap water and baste it to the adult tanks and the smaller breeder tanks, being careful not to overfeed. My frozen food is something I prepare myself, and it consists of frozen krill, freeze dried mysis shrimp, freeze dried grass shrimp, and freeze dried bloodworms. I get my freeze dried foods from Jehm co (Jehmco.com).

Frozen Food Recipe

- 1/3 Cup defrosted krill
- Cover w water
- 1/3 cup freeze dried foods
- Cover w water to 1"

Grind 10 seconds, remove excess water and freeze

I start by defrosting approximately 1/3 cup of frozen krill and pour it into my blender with enough water to cover it. I then blend it in the "grind" mode for ten seconds. I then add 1/3 cup each of the above three freeze dried foods to the blender, add more water to reach about an inch above the foods, and again run the blender on "grind" for no more than ten seconds. This insures that the food is not too fine when fed to the fish.

I place wax paper in a Rubbermaid shoe box and, after pouring the mixture through a large, finely woven net and squeezing the excess moisture out, I place the paste in the container and flatten it into a cake about one inch thick. If done correctly, it should take up the entire bottom of the box. I next insert Popsicle sticks into the cake to separate it into five bars and place it in the freezer. It is easy, using the wax paper and the separator sticks, to break a bar off from the cake and defrost it. This seems like a lot of work,



so that I can easily drain water while saving the daphnia that are being drained out. The water is replaced with clean, aged water from my rift lake cichlid tank, which contains a lot of rock from my old reef tank. This tank contains very hard water which is perfect for the daphnia. An air line, connected to a piece of rigid tubing in the container, creates gentle bubbling in the container and keeps the water in motion.

I feed the daphnia with a powder mix prepared as follows: I mix a tablespoon each of soy flour, whole wheat flour, spirulina powder, green pea flour and brewer's yeast. I order the soy flour, whole wheat flour, the spirulina powder and the green pea flour from nuts.com. I mix these ingredients in a small container and keep the mixture by the daphnia container. I feed around one third of a teaspoon of this mix to the daphnia every two days.

Daphnia Food Recipe

I Tbsp Each:

- Soy flour
- Whole wheat flour
- Spirulina powder
- Green pea flour

Mix & Feed 1/3 tsp every 2 Days

I do not change the water more than once a month, and do not siphon any of the detritus off the bottom of the container since the detritus contains daphnia eggs, and I change no more than half the water. I also keep plenty of ram's horn snails in the container. Using this technique, I have managed to produce a very large colony of daphnia, which has survived and grown for several months. I harvest daphnia a few times a week to feed the fry and the breeders.

I once heard Rosario Lacort, one of the finest hobbyists I have known, say that if the fish are healthy and generating a lot of fry, your food is working. The last two years have been banner years in my fish room, not just for my killifish, but for most of the fish that I have maintained. I attribute this success to my water changing routine and, in no small part, to the foods I am feeding, chief among which are baby brine shrimp, my prepared frozen food and daphnia.

References:

- Gary Lange and Mike Hellweg: A Scientific, Economic, and Common-Sense Approach to Brine Shrimp Hatching: *TFH Magazine*, April 2007



Aquatic Experience 2016

2016 was my first visit to Aquatic Experience. Having been to some of

the large shows in Europe that was my expectation and comparison. This US show is, however, very young and when talking to those who have gone regularly it is improving. It was a bit smaller than I expected and had a bit more salt, but I can understand that, salt is flashy, has more mystery and is generally where the large manufacturers and retailers would like to see things go because of their own profit potential. **Walmart, PetCo, PetSmart and a few other fresh water chains in the US have most of the public's generic freshwater business and are a difficult market to penetrate.**

Nano set ups are also meant for that cross market and are beginning to catch on, especially with the introduction of easy to care for freshwater shrimp.

2016 had some Fantastic shows, equally Great speakers and booths by Manufacturers, Retailers, Aquarium Societies, and special interest groups. There is an increasing number on the show floor who are conducting **sales of easily handled items like Plants, Frags, Small Eqpt and Books but few fish yet.** Direct sales is big elsewhere. Expect to see this segment grow as independents realize this potential and the organizers



realize creating a huge marketplace will create more traffic than just product displays or demos.

Some of our MASi contacts already have their own booths: Dustin's Fish Tanks, Mark Huffman's Mark of Excellence Aquatics and others one sees at large Swap meets. Others like Jennifer Williams, Barb Fiorentino, Rachael O'Leary, Ted Judy, etc. were also there. One could bump into nearly anyone on the show floor.

Everything can't be shown here but maybe it'll give a flavor of the event. —EDITOR



Both Fresh and Salt!



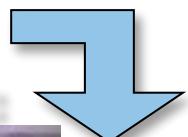
Time to renew 2017's
MASI Membership.

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Check out these Videos of the Event:



Dustin's
Day One



Dustin,
Gary &
Cichlids!



Huge
Cichlids



Shrimp
King



Shrimp
Contest



AE Pt 2



AE Pt 3



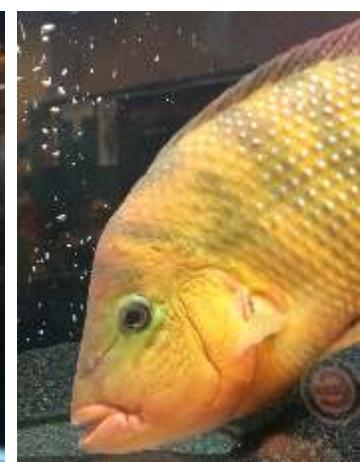
AE Pt 4



Aquascape
Contest

The 2016 Aquatic Experience had Plenty to see with 5 contests displayed in the big hall.

- **1st International Shrimp Competition**
- **Large Tank Aquascaping Live Contest**
- **Nano Tank Aquascaping Live Contest**
- **Kids Aquarium Theme Contest**
- **ACA Cichlid Competition**



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Spawning Bob and Mathilda

Astronotus ocellatus, the Oscar Cichlid

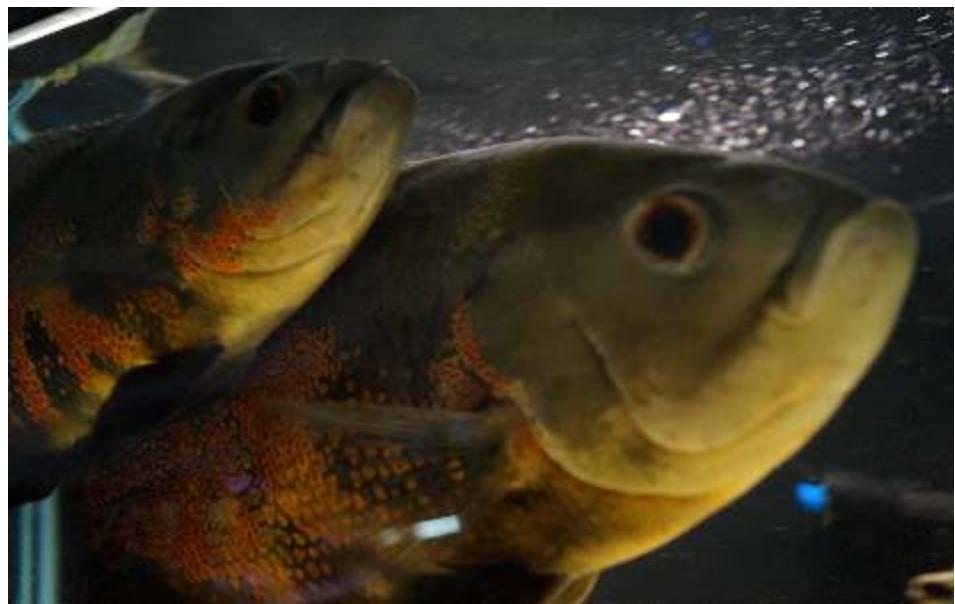
Debbie Sultan

ONE OF THE great difficulties in breeding *Astronotus ocellatus* is not actually getting them to spawn, but rather getting a compatible pair that won't cause damage to or even kill each other in the process. It is recommended to purchase a group of at least 6 juveniles and let them grow up together in hopes that you will get a pair to form. Once a pair bond is established the remaining Oscars must be rehomed or face the wrath of the pair. Oscars can be pouty and emotional, but when they fight they give it their all and it is a scary sight. We are fortunate to belong to a club that frequently "shares" fish, thus allowing members to get experience (and Breeders Award Points) in the spawning of a myriad of species. This is how we were able to bypass one of the greatest hurdles in breeding this difficult fish – we were given a bonded pair that spawned regularly to house for a while.

Bob and Mathilda's breeding has been previously reported in The Darter (January/February 2016, vol. 42, no.1, "Oscar and Olive"). They are a large pair – Bob is easily 12" long and Mathilda about 9". They came to us

from a 4' x 2', 110 gallon aquarium and were downgraded to a standard 75 gallon (the only tank we had available at the time) and from water with a pH in

frequently hitting the glass lid in her eagerness to 'capture her prey', as it were. The tank, which we kept at 80° F, had one large piece of driftwood and



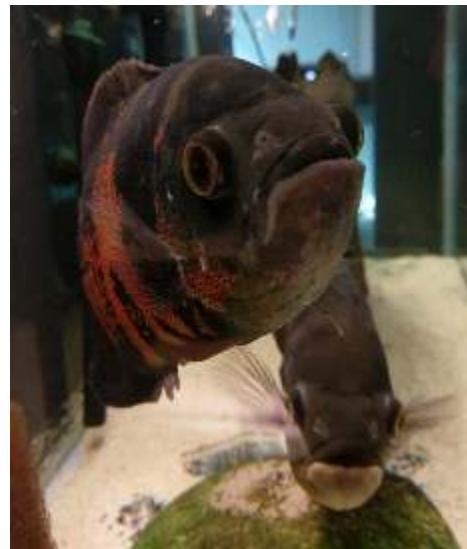
It was hard to get a good picture of Bob and Matilda as they were constantly begging for food.

the low 7s to our pH 8.3, 12 dGH tap water. And of course they were still Oscars. We were not counting on this being a cakewalk. The pair settled into their new home without incident and quickly began devouring Hikari Cichlid Gold medium floating pellets with an occasional blackworm treat. Mathilda most definitely ate with more gusto,

one smooth, oblong river cobble on a sand substrate. Filtration included 2 large sponge filters and an Emperor 400 HOB filter. We performed weekly water changes of at least 50%.

It wasn't long before we observed these two posturing with each other. They would face the front of the aquarium glass with mouths wide open, wagging their bodies, then turn towards each other with half-hearted open-mouth charges. There was never any damage done to each other and we took this as a prelude to the breeding dance. We were right. Soon thereafter we noticed poor Mathilda rather beaten up – she had missing scales, a torn lip, and other signs of fighting. And she was hovering with Bob over the river cobble guarding about 300 white eggs. We were elated! The following days we noticed that the eggs remained white, and on the 3rd day they were gone.

Sigh! This pattern repeated roughly every month. Mock fighting and posturing, Mathilda getting roughed up, eggs being laid and soon thereafter eaten. The eggs always remained white indicating that they were likely infertile. These two were



Bob and Matilda with eggs.



practicing but my, was it rough! Each time the eggs disappeared we increased our water changes to help Mathilda recover from Bob's violent courting. Oscars are very resilient and Mathilda always healed quickly, but still this rowdy behavior was stressful for us to watch.



The pair with wrigglers.

The 4th batch of eggs was laid on Thursday, August 25. We were getting used to this routine so rather than tip-toeing around their aquarium when they were on eggs, we waltzed around the fish room as usual, turning on lights and dropping food into the tanks. We weren't expecting any miracles but I did notice on Saturday that a good number of these eggs were now tan. On Sunday



Protective Bob!

morning when I went to turn on their tank light and saw a clean stone I was not at all surprised. However, rather

than race each other to the top of the aquarium for their breakfast kibble, the pair remained on the bottom of the tank, huddled in a corner. Could it be?

Yes! Wrigglers! They had excavated a small pit in the sand and were diligently guarding a mass of shimmering brown eggs. Over the next few days they moved the spawn from spot to spot, always guarding and charging the glass if we came too close. I swear, they could even tell if we were watching from across the room, as this elicited the same tank busting behavior as an up-close intruder. Suddenly their aggressive behavior was charming. The following week, Bob and Mathilda

president, Pat Tosie, we decided to siphon out a portion of the fry to raise up in a separate 2.5 gallon tank. Pat had kept this pair previously and warned us that he had free-swimming fry many times, but as soon as the pair decided to spawn again they ate all of their previous young. The day of the removal was wrought with anxiety as we imagined Bob latching on to any offending hands near his brood – he could easily have drawn blood – but with coordinated teamwork we were able to siphon out about 50 fry with no harm to any involved. We filled the small tank with water from the main tank and added a gently bubbling sponge filter, a chunk of mulm covered



Bob with Fry

continued dutifully guarding their now tiny, free-swimming fry. Every time they chased an errant swimmer down, picked it up in their gaping maw and spit it back into the cloud of their cohorts my heart melted a little. We had fired the brine shrimp hatchery up again and started feeding baby brine shrimp three times daily. We also temporarily halted water changes, which made me nervous, but my fear of sucking the babies down the basement floor drain outweighed my abhorrence of high nitrates.

With free-swimming fry we breathed a sigh of relief and decided it was safe to start confiding in friends that our Oscars had successfully spawned. At the advice of our club

sponge, and some java moss hoping to provide biofilm and aufwuchs for grazing in addition to baby brine shrimp. I performed small daily water changes with a section of airline and used a pipette to transfer any fry inadvertently sucked up.

The babies in the small tank did fine with just a few losses, but what surprised me was the comparison between these and the batch left with the parents. By week 3 the fry that had been left in the main tank were half again as large as the cohort we removed. I know **it is documented that Discus and Uaru fry practice "glancing", or eating the parents' slime coat**, but it appeared that the fry in the main tank were doing this as well. They could have been simply hovering



close to the parents for protection, but at times it sure looked like they were getting a meal there.



Possible glancing behavior.

There was another incident at week 3 that led us to remove Mathilda from the tank. We were working in the fish room doing our weekly water changes. This alone was trauma enough for the Oscars - then we noticed one of the sponge filters in their tank had become clogged and was no longer bubbling. Once this was removed and cleaned we re-filled the tank, only to find that their HOB filters would not prime. We ended up having to swap this filter out with an entirely different unit.

Now you all know Oscars can put on quite a show of bravery, but in my opinion they are really “delicate flowers” that are easily bothered by changes to their surroundings or routine, and their reactions to disturbances can be unpredictable. When we returned to the fishroom that evening before going out, poor Mathilda was on her side in the corner being relentlessly attacked by Bob. In just a few hours he had really done a number on her. We immediately netted her out and placed her in her own 10 gallon tank, whereupon she went to the darkest corner and laid on her side. It was heartbreaking to see. Meanwhile, Bob swam back and forth across the front of his tank glaring moodily at us.

These are the days in fishkeeping that I dread. We knew another MASi member and amazing fishkeeper would

be taking the pair in a few weeks so we decided to keep Bob and Mathilda (or as we jokingly called them now, Ike and Tina) separated until that time. Mathilda received daily 30% water changes and, within a week, began begging for food like her old self – though she still spent a lot of time laying pitifully on her side.

One of the unforeseen benefits of splitting the pair was getting to observe the hulking Bob treat his offspring with unimaginable devotion and tenderness. Initially the fry spent most of their time hovering around his body, and he diligently charged the glass if anyone approached too suddenly. As there was no impetus to spawn again he devoted his energy towards taking care of this brood. When it came time to say goodbye to the parents it was bittersweet pulling him out of the tank.

From here on out keeping the babies happy was pretty easy. With Bob gone we returned the fry from the small tank to the big tank. They all had voracious appetites and easily transitioned to crushed flake food. At one point I gave in to their incessant begging and overfed them, and as a result about a dozen perished. **Take note – Oscars will ALWAYS beg for food, whether they need it or not!** After this I cut their feeding from 3X a day to twice a day.

All told we have at least 100 of these small river puppies begging for food and attention. While at times stressful, this was another intensely rewarding breeding experience. The care shown to young by South and

Central American cichlids far surpasses anything we have seen with their African cohorts. Sure, mouthbrooding is a cool trick (and an evolutionary wonder) but New World cichlids win in the parenting department. Now comes the task of finding them the best possible homes.

I want to end this article with a declaration of my immense love of Oscars. Yes, they are common. Nearly every aquatic pet store carries them, both as young adorable beggars and as surly mature adults that have been relinquished due to their owners no longer being able to care for them. Regardless of the fact that nearly everyone has, at one time or another, kept these South American beasts, they remain my all-time favorite fish.

I have never experienced such a range of emotions, such interactions, such brutish charm as with my first Oscar (and one of my first fish) -Hurley. When Hurley cleaned off a rock in his aquarium and started laying eggs I knew we had been wrong for many years about her gender. Within a year of this discovery I lost my beautiful girl – I suspect she swallowed a rock as she re-arranged the tank, preparing a fresh spawning sight. To this day I am still overwhelmed with sadness by her loss. She is buried under a weeping willow in our yard and will always be remembered with love.

Our spawn of the Astronotus ocellatus is dedicated to Hurley- and all of the other lost fish friends before her- but mostly to Hurley.



Small self-contained tank systems

Great gift or Pain in the rear?

Kathy Deutsch

THE HOLIDAYS ARE approaching and those tiny self-contained tanks in their shiny boxes look pretty good.

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

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

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

The systems I am talking about are about 1-5 gallons, with a filter built in and an LED light over the top. My betta lives in one, and has for years with 2 *Corydoras similis*. I also have a spider plant in the top, with roots reaching into the water. The betta likes the cover; the plant likes the nutrients. The plant roots serve another purpose. They catch and hold bits of food that would otherwise fly around the tank and get sucked into the filter so that the betta gets a chance at eating them.

That is my main complaint with these little tank systems. The filter is overpowering and cannot be dialed back. The food rushes by and disappears into the filter. The current is so crazy that some fish cannot swim against it.

To fix this, the outflow from the filter in my betta's tank is angled off to

the right so it hits the wall, deflecting some of the current and I use both a plant on top of the tank and a substrate planted *Cabomba* to act as a slow-down, so the betta food is stopped before it can swirl away. I also have structure in the tank to break the flow, and so the cories can sit in a quiet spot. The betta hangs out in a dark corner by the cories at night.

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

The filters of these tanks are straight forward and easy to clean.

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

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

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

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

If you want a tiny tank and plants are your foremost interest, I think it would work well. Position the tank where it can get some indirect sunlight, BUT away from heating/cooling vents. If you want to add fish, I would first add some rockwork the fish can hide in and to see if it will slow down the water movement without creating dead spots. Then I would try 2 dwarf corydoras, watching for

stress. Maybe tetras or small livebearers? If the water flow is slow enough and the tank is warm enough (73-75 degrees F) a male betta may work out. (See Ed's note.)

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



Ed Note: Nano tanks were very much in evidence at Aquatic Experience this year and are used frequently for shrimp. Dennerle now has a whole book on plants, shrimp and fish for such. I use them for several species of livebearers, ie: *Cnesteron deccamaculata*, *Heterandria formosa*, *Neotoca bilineata*, *Poeciliopsis prolifica*, *Phallichthys quadripunctatus*, etc. All less than 1 1/2" and smaller than guppies. *Otocinclus* are my Loricard of preference but young bristlenoses work for up to a year. I also use *Cory habrosus*, *Cory pygmaeus*. There are lots of little tetras and barbs but few Cichlids small enough, however.



Minifins

Gymnocorym bus ternetzi

The Black Tetra

**Mike Hellweg, CFN
(Certifiable Fish Nut)**

COMING TO OUR hobby from the Rio Guapore in Bolivia is the stunning Characin we know as the Black Tetra. In England it is known as the Black Widow, but it lacks the red hourglass of its Arachnid namesake. It is usually listed among the top five in popularity among the Tetra clan [it is still in the top ten], especially when it comes to easiness in preparing and inducing them to spawn. In fact, **it is probably THE Tetra to introduce the novice breeder to the nuances of raising Tetras.**

Since the late 1980s, the Black Tetra has become available in an amazing myriad of "colors". Sometime in the mid-1980s an amelanistic (lacking black pigment) strain became available - the WHITE Black Tetra. Someone then came up with the "brilliant" idea that this white background would make a great canvas upon which he could work his magic with dye. Thus were born the "Blueberry", "Grape", "Strawberry", etc. Tetras that can be found in many shops which also sell the "wonderful" Painted Glassfish. [Fortunately these horrendous practices have largely been ended] I personally find this practice hideous, but there is no accounting for taste. Some people even liked Bill Bidwell! [insert Stan Kroenke here] If these "colors" weren't selling well, breeders wouldn't be going through the

Hi fellow MASI members,

Many of you may remember my old column **Minifins**, which appeared in the Darter back in the early and mid-1990s. I signed off in the May/June 1995 issue with the promise that I would "be on hiatus so Angela and I could get moved and settled, and start working on our (my) fishroom."



Well, it's been a bit more than 20 years since that statement. **Life sort of got in the way, but now I'm back!** I'm going to start off where I left off, as sort of a refresher...I've noted updates to my last article in brackets.

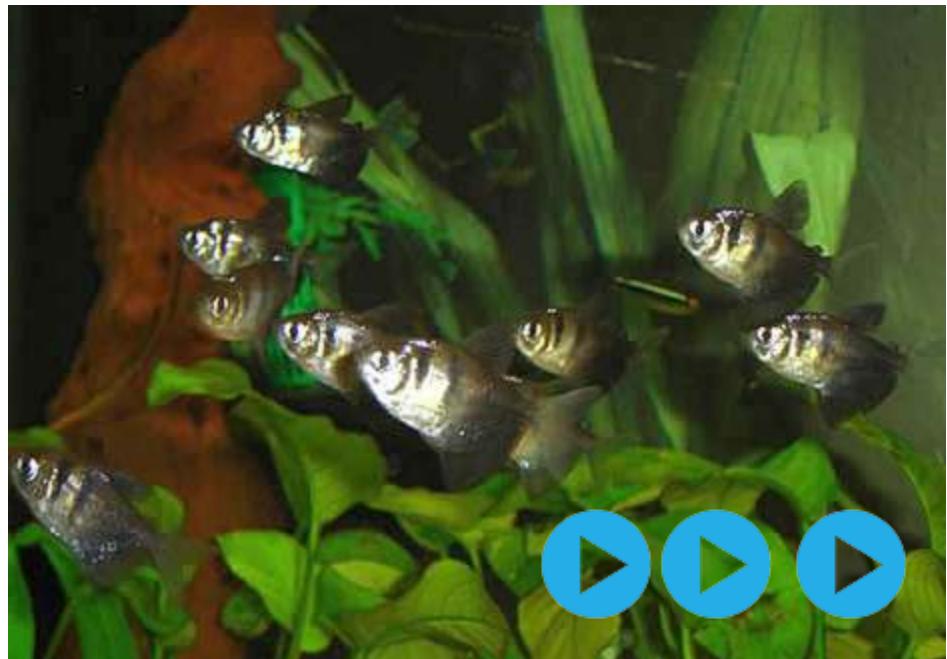
By Mike Hellweg, CFN (Certifiable Fish Nut)

extra cost of dying them, and retailers wouldn't be stocking them.

Obviously, these man-made colors cannot be transferred from one generation to the next. I have been in a shop where I have overheard people ask the clerk if they spawned a red and a blue, would the offspring be purple?!!! Worse yet, the clerk answered that she thought they would be BLUE since blue was dominant! After all, weren't more than half of the fish in the tank blue?!!! I'm not kidding! After the couple left, I mentioned to the clerk that the fish were dyed, not naturally that color, and she thought I was lying! Needless to say, I haven't returned to that store. [It actually closed about a year later - no loss there!]

To my mind (admittedly the mind of a twisted Tetra Fan), few sights are more stunning than a shoal of young Black Tetras gliding gracefully throughout the tank. Even a shoal of White Black Tetras in a darkly planted tank with a dark bottom is strangely mysterious. They look like ghosts flitting about among the vegetation. Try that for a Halloween themed tank.

Earlier I mentioned "young Black Tetras". Young Black Tetras have much more color than older Tetras. As they reach puberty, their colors begin to fade to the pleasant silvery gray that marks a mature G. ternetzi. Obviously, the white colored specimens don't lose their white coloration, since it is already the absence of black that makes them white! **As for the dyed specimens, by the time they reach maturity, most of their hideous cosmetics have faded away.** A large female may reach two and a quarter inches without her tail, and may be nearly



that tall from the top of the dorsal fin to the bottom of the anal fin! There are also long finned variants which may add another inch and a half to the total length. [Today there are also genetically modified *G. ternetzi* called ®Glofish to which a coelenterate gene has been added to cause the fish to glow in different colors. These will breed true, but as they are patented, it is not lawful to intentionally breed them or distribute their progeny]

Youthful coloration is metallic silver that blends into a velvety black. The silvery front half is marked by three black bands. The first goes through the eye, the second just behind the operculum, and the third midway along the side. The large anal fin is black, as is the dorsal. The paired fins, the caudal, and the adipose are all clear in most specimens. The male is more slender, and its colors are more intense, even into adulthood. The female is obvious from her hugely distended belly when she is full of eggs.

Black Tetras make good community tank residents, where they will shoal peacefully among themselves and along with other similarly shaped fish. They do best, as do most Characins, in a shoal of 6 or more individuals. Kept singly they can be a bit scrappy with slower fish such as angels and Bettas. They are undemanding as to water conditions and will eat anything you feed them. They deserve a little live food from time to time, but will also thrive on flake, even being willing to spawn on a diet of nothing but flakes! Not many of their Tetra cousins will oblige that willingly, but they can serve to whet your appetite!

They are very easy to induce to spawn, even to the point of spawning in the community tank.

Of course, no fry would survive in such an environment. The best way to include them to spawn is to separate the adults for a week or so. While you are doing this, set up the spawning tank. It can be a five gallon tank.

Set up is simple: for a five gallon tank, make a mat out of plastic needlepoint canvas cut just a bit larger than the bottom of the tank. This will cause it to bow towards the middle of the tank, where I also place a couple of marbles to keep it off the bottom. I also use a couple of boiled nylon mops, one floating, and one or two on the mat. The water should be soft, but hard water will work as well. Black Tetras have been in the hobby for so long they have become domesticated and will do well in just about any water. I have even raised them in our well water at 350 ppm! If you want, you can also add Blackwater Tonic or something similar to help condition the water.



Black Tetra: Normal



White/Ghost



Fruit/Dyed Colors



® Glofish



® Glofish



Longfin Black Skirt

After feeding and fattening up the adults for a week or so, it is time to put them in the spawning tank. Add the female first, and then add the male right before lights out. They will usually spawn in the wee hours of the morning and be done long before noon of the next day. Remove the parents if they seem to be more intent on looking for food than in looking for one another. This means they are done spawning. They are now looking for food. The only food in the tank is their eggs.

The fry hatch in about 24 hours. For the first few days, they look like little slivers of glass hanging from the sides of the tank. On the third or fourth day, they start to hop. This is when you should start feeding. By the next day, all will be free swimming and looking for food. If they don't find it, they will quickly starve and die. One of the best foods is green water. This is water that is full of algae and micro organisms that will serve as their first food. The reason it is so good is that you don't have to do anything once you add it. It won't go bad, and they will be surrounded by food for their first critical few days. If green water isn't available, I would use something like spirulina powder, APR or LiquiFry. [LiquiFry is no longer available, but foods like Golden Peals, Sera Micron, etc. will all work] After 5 days, switch to baby brine and finely crushed flake food. You are now on your way!

At about 3 weeks, move them to a larger tank or at least to several small tanks so they won't be stunted. If the spawning tank is the only tank available, do lots of water changes to dilute the hormones which will stunt them.

Just a suggestion: a 55 gallon tank, well planted with a dark bottom and background, and a shoal of 100 or so half inch Black Tetras. Wow!

The next article promised was to be a look at the Spiketail Paradisefish, *Pseudosphromenus dayi*. Some of you have been waiting a long time! That is where we will go next.

Photos: Tropical Fish Keeping, Segrest Farms & Editor



Blue lighted ® Glofish /Tank at the 2016 Aquatic Experience featuring G ternetzi



ROAD TRIP TO MASI

**IAN FULLER
speaks
10/20/2016**

**Marti Van Allen &
Carol Sindelar**

(EIAA FinFlap Reprint)

SOMETIMES YOU JUST have to decide to go; and then go. It was early summer when the planning began. Marti contacted Carol to see if she would go to the MASI meeting in St. Louis, Missouri on a Thursday night to hear Ian Fuller, the cory catfish guy from across the pond. Knowing this would be a challenge to



**Time to renew 2017's
MASI Membership.**



Ian Fuller

Marti Van Allen

juggle schedules, we both put it on the calendar in ink as something that will happen. Something to be scheduled around.

A word to the wise. When planning to attend an event in a distant city, it is really, really helpful to make some contacts in advance. Marti was also in contact with the speaker, Ian Fuller. She ordered several items from his website which he graciously offered to bring to the Missouri meeting; catfish pins for her lanyard, a T-shirt and a watercolor painting. We will tell you again later what a great guy he is.

Up early on departure day, we arrived in the St. Louis area around noon, so we had plenty of time to drive to the different shops before checkin at 3 o'clock. Thank God for Garmin. So we navigated the cities quite well and visited two shops: Aqua-World and Tropical World Pets. We must say here the displays in the shops were very nice. Gave us some new ideas.

The Missouri Aquarium Society, Inc. (MASI) has a great group of people in it's membership. The hotel was directly next to the

restaurant where we had dinner with several members of the club including Gary Lange and the speaker Ian Fuller before the meeting. It worked out well. Then after dinner we were led to the meeting site at the nearby church. I know it was dark but I swear we were driving the wrong way on the wrong side of the street for a while. Do they have an English district with crazy streets? We had the GPS, but following was much easier!

Bottom line: meeting Ian Fuller was delightful. He is gregarious, friendly and willing to share the knowledge that he has gathered over the years. He has a charming sense of humor. We had both heard him speak previously but you retain more each time you listen. Marti had him sign



Corydoras julii



copies of his books she had brought with us.

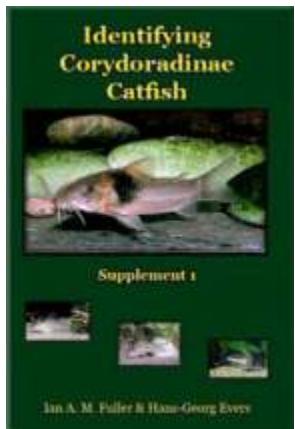
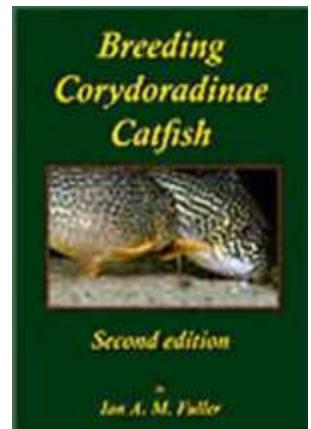
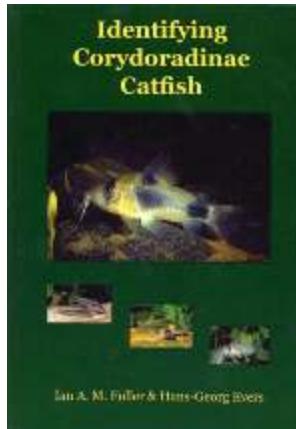
Ian gave a wonderful presentation that included information on all facets of owning and spawning Corydoradinae fish. **There was so much information in Ian's presentation, it was glorious.**

- How to tell the males from the females,
- What to feed them
- (micro worms, white worms, (Liquidize earth-worms in a dedicated blender, freeze, then grate the block of frozen earthworms),
- Things that are important so that the barbels around their mouths are not injured:
- Substrate should be very fine, smooth sand - about . inch deep.
- Filtration
- Ian loves Matten Filters (Swiss Tropicals),
- Additives: oak leaves left in the Cory tanks.
- When bagging Corys, if you see a fine mucus coming out of their gills (because you just chased them around the tank for ten minutes trying to catch them, and they are stressed), re-bag them in tank water after they calm down. They are exuding toxins that will kill them if you leave them in the original bag.
- Melafix and an airstone are good for treating sick or injured Corys. **...and SO MUCH more!**



Time to renew 2017's
MASI Membership.

Darter November/December 2016 Volume 42, Number 6



Set aside all the fish conversation, the hospitality, seeing friends, and information from great speakers, it is



Corydoras sp. CW117

interesting to attend another club's meeting just for the experience. An opportunity to see things done... differently. We are not saying better, just different.

We had a good time on the ride down and the ride back. Fish stories and beyond. Just do it - Just go and make it happen.

Ian has a website:

CorydorasWorld.com, the home of information on virtually every known species of Corydoradinae Catfish. Become a member for unlimited access to data, reports and images. Membership fee is approx. \$20. In the Knowledge-base, is the most detailed and comprehensive information complied on Corydoradinae Catfishes, including husbandry and details



breeding accounts in the form of spawning logs. Every known species is detailed on its own page. There are articles by other Corydoradinae breeders, and the latest scientific news and updates. Ian also has an Online Shop for purchase of his and other books dedicated to Corydoradinae. Also for sale there: original catfish artwork, badges, specialist fish foods and Corydorasworld dedicated merchandise. It is well worth the membership fee.

Articles, species information pages, spawning logs, dedicated breeding section and members only forum. If you want to learn more about Aspidoras, Brochis, Callichthys, Corydoras, Dianema, Hoplosternum, Leptoposternum, Megalechis, Scleromystax, C-Number and CW-Number, this is the website to join.

- Marti Van Allen

We encourage you to talk to your friends, get a car full and go to one of these events. Being submerged in Fish Geek-ness is wonderful.

**Cory photos from
CorydorasWorld.com**

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2 Little Grey Ditch Fish

Skiffia multipunctata & *Girardinichthys multiradiatus*

Chuck Bremer

SKIFFIA MULTIPUNCTATA IS one of about three species in the genus- all small fish less than 3" when adult. Most are remarkably plain, this species may, however, often be found with the male sporting spots or blotches of yellow and black during mating season. The number of the spots is somewhat dependent on the collection location. The three species: *multipunctata*, *francesae* and *lermae* are all closely related and at least two, *multipunctata* and *francesae* are known to produce hybrids.

Unfortunately the whole group is found in a restricted area of the Ameca and Lermae river drainages of Mexico. This species appears to be found at only half the locations as in 2000 so it is considered endangered and has been placed on the CARES list. *Francesae* is considered to be extinct in the wild. Extinction of all three species is

currently being driven by a deterioration in water quality and competition with other introduced species into the same habitats, such as mollies, swordtails, two spot livebearers, platys and Tilapia.

Skiffia local habitat is not unlike the creeks, streams and small ponds we might otherwise find in our area. They are usually found in water less than 1 meter (40 inches) deep and may be over any substrate. Often there is a lot of cover in the form of cypress roots or other vegetation in which to hide and which accumulate algae or other sediment born food sources. The Skiffia species all have two rows of teeth that appear adapted to scraping algae from plants and other substrates- shaped and positioned much like a cow's teeth for tearing plant material.

It seems I have no problems with most Goodeid species. The first 20 point fish I spawned was then *Skiffia*, now *Neotoca bilineata* the two lined Skiffia, and I have been looking for similar species since. In October 2015 I took several species of livebearers to the Minnesota Aquarium Society's Fall Auction and came home with a couple of new species of livebearers myself. One of those was *Skiffia multipunctata*, two young pairs that were being BAP'ed by Randy Carey.

The collection location of the *Skiffia multipunctata* in my fish room was indicated to be Laguna Camécuaro which is now one of those locations from where they have been extirpated. The spring fed Lago de Camécuaro is notable as being a very popular park in Michoacan known for its idyllic settings, cypress trees and wedding partys. Lago de Camécuaro National Park is located east of the city of Zamora de Hidalgo heading towards Morelia, Michoacán. This is why

keeping CARES fish is important and gives that little, grey, ditch fish a reason



for being in my fishroom.

These fish had no significant markings and were truly Charley Grimes epitome of "Little Grey Ditch Fish"- or as my wife calls them- small, gray, non-descript livebearers- of which my fish room is full. For quarantine they were dropped into a 2 1/2 gallon holding tank with only an airstone for company. I put a small handful of java moss in the tank to give some cover and the fish immediately began diving joyfully into it much like a killi into a spawning mop. They seemed to like the temporary home. This was in a back room of my fishroom that gets little heat but is where I keep many of my livebearers.

Over time the little 2 1/2 gallon tank became more permanent. I fed TetraMin® staple flake food once every day and supplemented on occasion with blackworms. There had been a few pond snails on the java moss and they cleaned up the excess food so I never introduced a filter. About January I noticed about 10 fry in the tank. The small colony in the tank continued to grow. During the time from October to February the temperatures dropped at times below 68 degrees and rarely got above 73 degrees. I would not call these fish well cared for with such a small tank with no filter but they seemed to be thriving.

In late March the number in the small tank had grown to nearly 40 fry so I moved the colony to a 5 1/2 gallon tank to give them more room. The fry continued to grow and the colony prospered and I moved them once again in early May into a 10 gallon tank that is now their permanent home.

Skiffia multipunctata - Location: Tangancicuaro; From the ALA Fish Show at the 2016 ALA Convention



Although I eventually did see some male fish with some black spots in this group I wanted more colorful fish so I began the process again with the same species but from a different breeder acquired at the 2016 American Livebearer Convention in South Bend, IN. Again, in early May into a 2 1/2 gallon tank with a little java moss where they began to spawn then in June were put into the 5 1/2 gallon tank used previously with the first *S multipunctata* source with the same results. In fact, several species of Goodeid came home with me from the 2016 ALA. All the Goodeids I placed into tanks in the cooler back room have begun to spawn, including *Chapalichthys pardalis*, *Chracobon lateralis*- Los Berros, *Allodontichthys tamazulae*, *Skiffia multipunctata* and *Girardinichthys multiradiatus*. The only ones that haven't spawned were placed in the front room with slightly higher temperatures, up to 80 degrees- *Chracobon lateralis* - Guadalupe Agularis and *Zoogonequis tequila*.

The Goodeid family is found nearly exclusively in the highlands of Mexico and adaptations for that region must make them particularly adapted to my fish room. Why? Although most think of Mexico as a subtropical climate, this family is found in the high plateaus where temperatures are cooler than at sea level, averaging 50 to 75 degrees Fahrenheit. Since my fish room is unheated for energy saving reasons and fluctuates between 68 degrees in the winter and 78 degrees in the summer, this means that the temperatures match fairly similarly those this family of fish normally encounter in the wild.

Indeed some have reported that many in this family in their native range reproduce only in the spring and fall when water temperatures are the coolest. Uncommon water temperature regime may also be why they are difficult for some folks to spawn. Many folks keep their fish room near 80 or above, which is needed for some fish from tropical areas like the lower Amazon, including Discus and Angelfish, common staples in the hobby. In my cooler fish room I even have problems spawning some livebearers like the common Molly that like warmer temperatures. It would appear to me that 80 degree temperatures would make the Goodeid

family very difficult to spawn, not easier.

Fish are considered "cold blooded" meaning their metabolism rate is proportional to temperature. Under such high temperatures the cooler water species may have such a high metabolism they can't put on enough substance to support themselves and



developing embryos too and barely remain alive. I noticed this with *Jenynsia* species, also from a temperate habitat. Indeed some species, like the *Girardinichthys multiradiatus* and others in that genus come from even higher altitudes and require even cooler temperatures. At warmer temperatures, even in the upper 60s, they are very active, eat a lot but seldom have enough energy left over to produce fry. Most Goodeids, including the *Skiffia* genus are not as sensitive to heat as the *Girardinichthys* but heat sensitivity

probably still exists to a certain level in many of them.

If I am doing anything else special with these fish it's not obvious. The only thing I can come up with is the temperatures in my fish room.

The lesson learned with *Skiffia multipunctata* is sometimes we just luck into having the right conditions. If you keep fish differently than someone else, you will have luck with some species that may prove challenging for others. You'll never know till you try the fish on your own.

References:

North American Goodeid Working Group: <http://www.goodeidworkinggroup.com/Skiffia-multipunctata>

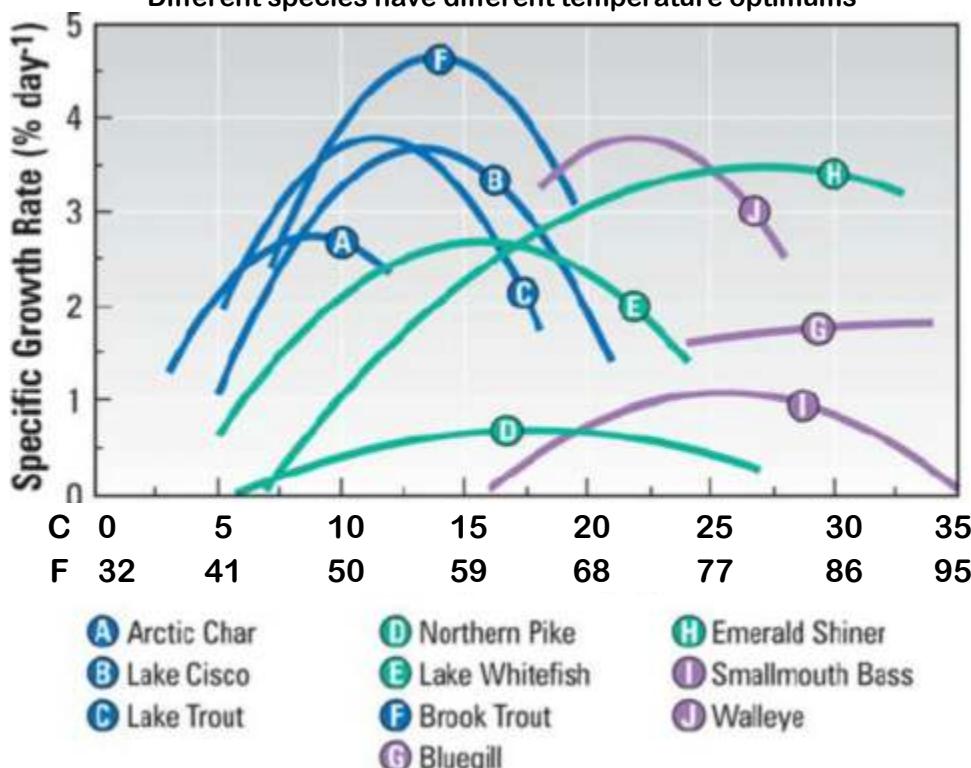
European Goodeid Working Group: <http://www.goodeiden.de/html/multipunctata3.html>

Skiffia Multipunctata - Saving Threatened Fish Species in Aquariums, Melody McKinnon, 2011: <http://allnaturalpetcare.com/blog/2011/11/13/skiffia-multipunctata-saving-threatened-species-in-aquariums-breeding/>

Reist, James D., Et al; General Effects of Climate Change on Arctic Fishes and Fish Populations (2006) Research Gate: https://www.researchgate.net/figure/6546889_fig3_Figure-3-Growth-rates-of-fish-species-at-varying-temperatures-determined-from-laboratory



Different species have different temperature optimums



FISHES AS DISHES**PATRICK A. TOSIE, SR.**

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

Tilapia and Shrimp Tacos with Cabbage Slaw

Ingredients:**Marinade:**

- 1/2 cup freshly squeezed lime juice (from about 5 limes)
- 1/3 cup olive oil
- 1/3 cup loosely-packed marjoram leaves
- 1 1/4 cups loosely-packed cilantro leaves
- 1/4 teaspoon crushed red pepper flakes
- 1 small garlic clove
- Kosher salt
- 1 1/2 pounds tilapia fillets
- 1 1/2 pounds large shrimp, peeled and deveined, tails removed
- 1 tablespoon vegetable oil, plus more for oiling the grill grates

Slaw:

- 4 cups finely-shredded green cabbage (about 1/2 medium head)
- Kosher salt
- 1/2 cup sour cream
- 3 tablespoons pickled jalapenos, chopped, plus 1 tablespoon pickling liquid
- Freshly ground black pepper

Taco Bar:

- 24 soft corn tortillas
- 4 scallions, whites and greens thinly sliced (about 3/4 cup)
- 4 large radishes, thinly sliced (about 3/4 cup)
- 2 cups prepared pico de gallo or fresh salsa

Directions:

For the marinade: Pulse the lime juice, olive oil, marjoram, cilantro, red pepper flakes, garlic clove and 1/2 teaspoon salt in a mini-food processor or blender until smooth. Cut each tilapia fillet in half through the seam, separating the thicker half from the thinner. Place the tilapia and shrimp in a large re-sealable plastic bag and add the marinade. Toss to coat, seal and refrigerate for 1 hour.

EAT MORE**FISH**

2016 BREEDER'S AWARD PROGRAM - Steve Edie

September

Member	Genus	Species	Common Name	Points	Bonus	CARES	Total
Jack Heller	<i>Apiogrammoides</i>	<i>pucallpaensis</i> **		15	10		465
	<i>Julidochromis</i>	<i>regani</i>		10			475
Dwayne Peters	<i>Neolamprologus</i>	<i>multifasciatus</i>		10			99
Dan Rios	<i>Ancistrus</i>	<i>cirrhosus</i>	Bristlenose	10			10
	<i>Labidochromis</i>	<i>caeruleus</i>	Yellow Lab	10			20
	" <i>Xystichromis</i> "	<i>phytophagus</i> @	Christmas Fulu	10	10		40

October

Member	Genus	Species	Common Name	Points	Bonus	CARES	Total
Chuck Bremer	<i>Tanichthys</i>	<i>albonubes</i>	White Cloud	5			902
Jack Heller	<i>Aphyosemion</i>	<i>campomaanense</i> *		15	5		495
	<i>Aphyosemion</i>	<i>jeanhuberi</i> (COFE 2010/3) *		15	5		515
	<i>Aphyosemion</i>	<i>striatum</i> "Lamberene" *		15	5		535
	<i>Epiplatys</i>	<i>lamottei</i>		10			545
Mike Hellweg	<i>Aphyosemion</i>	<i>poliaki</i> "Bolifamba" *@		15	5	15	6769
	<i>Ataeniobus</i>	<i>toweri</i> "Ataeojitos, San Marcos" @	Blue Tail Splitfin	15		15	6799
	<i>Elassoma</i>	<i>okefenokee</i> *	Okefenokee Pygmy Sunfish	20	5		6824
	<i>Xiphophorus</i>	<i>pygmaeus</i> "Rio Axtla"	Pygmy Swordtail	10			6834
Mike Huber	<i>Julidochromis</i>	<i>marlieri</i>		10			909
Gary Lange	<i>Melanotaenia</i>	<i>bowmani</i> *		10	5		1844
	<i>Melanotaenia</i>	<i>goldiei</i> "Dekai" *		10	5		1859
	<i>Melanotaenia</i>	<i>laticlavia</i> *		10	5		1874
Ed Millinger	<i>Geophagus</i>	<i>winemilleri</i> *		15	5		905
Mike Slater	<i>Corydoras</i>	<i>melini</i>	False Bandit Cory	10			45
Debbie Sultan & Tom Corradini	<i>Astronotus</i>	<i>ocellatus</i>	Oscar	20			760
Guy Tinker	<i>Cyathopharynx</i>	<i>furcifer</i> "Kigoma" *	Featherfin	15	5		62
	<i>Sciaenochromis</i>	<i>fryeri</i>	Ice Berg Ahli	10			72
Pat Tosie	<i>Thorichthys</i>	<i>maculipinnis</i>		15			5135
	<i>Vieja</i>	<i>bifasciata</i> "Rio Chacamay" *		15	5		5155

BAP Key:

* = 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>

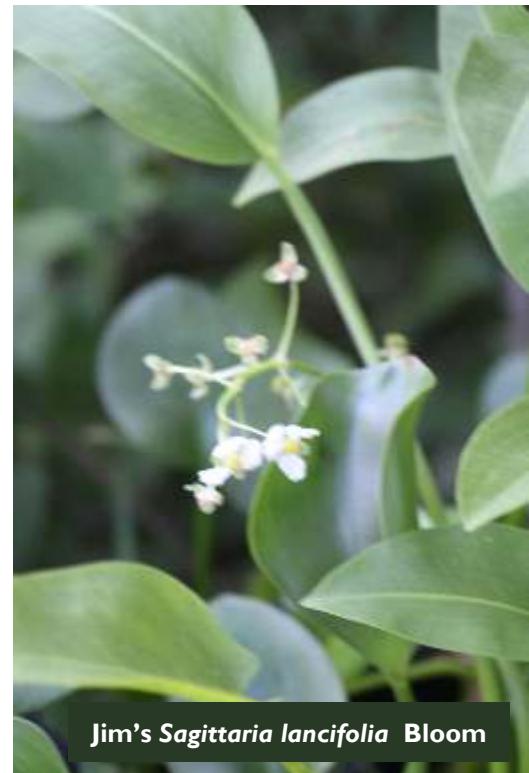
2016 HORTICULTURE AWARD PROGRAM - Mike Hellweg

September & October

Member	Genus & Species	Common Name	Type	Points
Daniell Kinder	100 points			
	<i>Lemna minor</i>	Dwarf Duckweed	V	5
	<i>Acorus gramineus variegatus</i>	Varigated Sweet Flag	V	10
Gary Lange	1835 points			
	<i>Echinodorus schlueteri</i>		V	15*
Guy Tinker, Jr.	10 points			
	<i>Spirodela polyrhiza</i>	Giant Duckweed	V	5
	<i>Vallisneria sp. rambo</i>		V	5
Jim Mueller	210 points			
	<i>Limnobium laevigatum</i>	Brazilian Frogbit	V	5
	<i>Salvinia oblongifolia</i>	Longleaf Chain Salvinia	V	5
	<i>Sagittaria lancifolia</i>	Lance Leaf Sag	V	5
	<i>Sagittaria lancifolia</i>	Lance Leaf Sag	OB	5
	<i>Bolbitis heudelotii</i>	African Water Fern	V	10

HAP Key:

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



In addition, Jim Mueller is a long way down the road to a seedling by submitting this photo of his Brazilian Frogbit Fruit/Seed Pod as he already turned in the flower in July. He only needs a photo of the seed and the new seedling to complete.



CLUB HOPPING - Steve Edie

Nov 18-20 - Cleveland: Ohio Cichlid Association – Extravaganza

Nov 19 - Peoria, IL: Tri County Tropical Fish Society - Fall Auction



2017 Dates to Save

Jan 14 - Urbana, IL: CAFÉ Auction

Feb 12 - St Louis: MASI Winter Auction

Mar 10-12 – Hartford, CT: Northeast Council of Aquarium Societies - Annual Convention

Mar 19 - Alsip, IL: GWAS Auction

Mar 25 - Hiawatha, IA: EIAA Auction

Apr 15-16 - Cedar Rapids, IA: EIAA Annual Show

Apr 28-30 - St Louis: MASI Spring Show Weekend

Apr 28-30 - Denver, CO: Aquatic Gardeners Association

May 4-7 - St Louis: American Livebearer 2017 Convention

May 26-28 - Chicago: American Killifish Association - Annual Convention

Jul 13-16 – Detroit: American Cichlid Association – Annual Convention

Jul 22 - Cedar Rapids, IA: EIAA Summer Seminar

Jul 27 - Urbana, IL: CAFÉ Auction

Aug 6 - St Louis: MASI Summer Auction

Sept 22-24 - Madison, WI: Cataclysm Convention

Oct 1 - St Louis: MASI Swap Meet

Nov 3-5 - Schaumberg, IL: Aquatic Experience

Nov 12 - St Louis: MASI Fall Auction

Nov 17-19 – Cleveland: Ohio Cichlid Association – Extravaganza

Nearby
Clubs linked
to their logo



Other links are on
the MASI
[Linkpage.](#)

Convention Ads
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		OTO double strength Chlorine/Chloramine test kits - 4 ounce	\$12.50	charles@inkmkr.com
		Flubendazole, 10% powder 25 grams	\$20.00	
		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
Sell	Kathy Deutsch	YARNS AND TAILS Yarn Crafts and Fishy Items Custom work welcome, mops any size, shape color. BREEDING MOPS "The One with the Leaf". Handmade, over 140 strands. Approx. 15 inches long. Leaf acts as shade and protection for fish. All new materials. Washed in salt water, rinsed in fresh, NO SOAPS USED.		Florissant, Missouri 314-741-0474 kathy@skdeu.com
				

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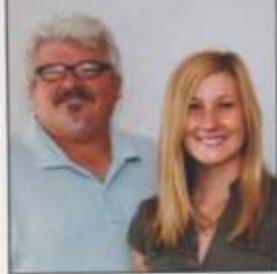
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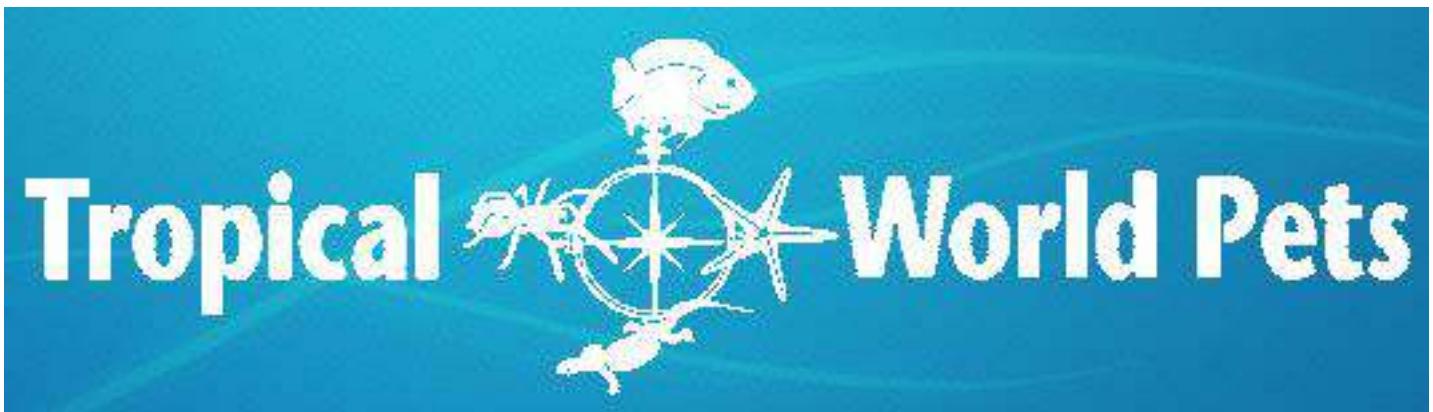


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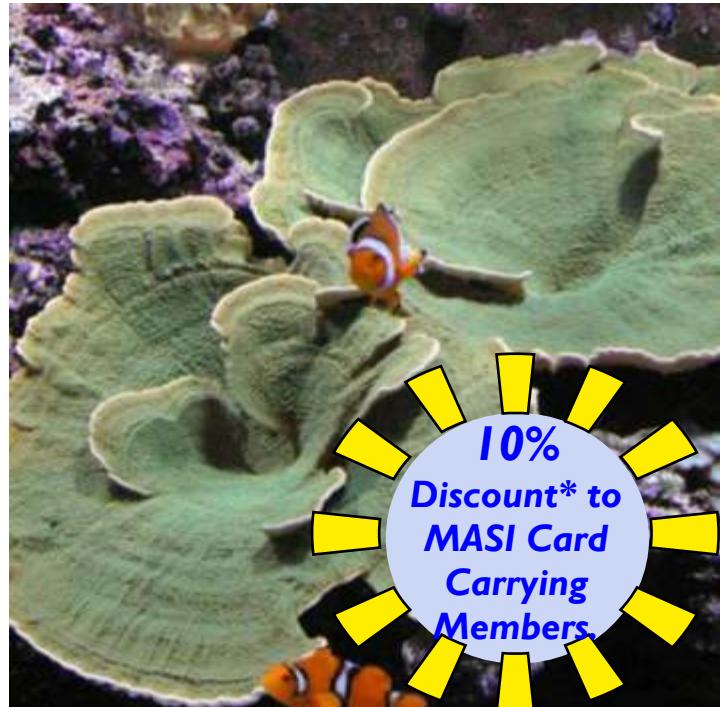
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Time to renew 2017's
MASI Membership.

Darter November/December 2016 Volume 42, Number 6

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Darter November/December 2016 Volume 42, Number 6

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Monthly Bowl Show Entry Form

Entrant Name _____

Month/Year _____ Monthly Class _____

— Fold here and place in front of bowl(s) with Entrant name hidden —

Line	Species: Latin or Common Name	SEX	Monthly	Open
1		M F		
2		M F		
3		M F		
4		M F		
5		M F		
6		M F		
7		M F		
8		M F		
9		M F		
10		M F		

Upcoming Bowl Shows

November
Aquatic
Critters:
Aquatic
Invertebrates,
Amphibians

December
No Bowl
Show

