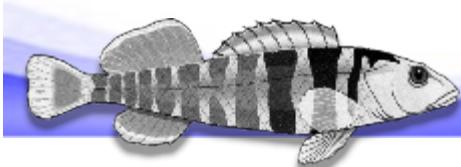


# The **DARTER**



V46#6

**November/December 2020**



# The DARTER

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## THE DARTER

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[join MASI](#)



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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 the membership chair.

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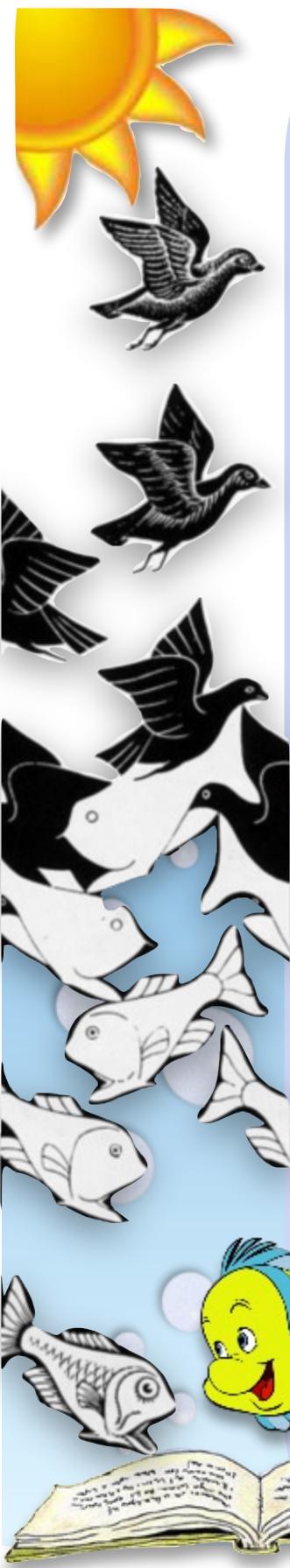
**Cover - Apistogramma**

**alacrina w Fry - Steve**

**Coxon**



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Click/Tap this to bounce back here. Then tap/click the article you want to read next!





## FROM THE PRESIDENT'S TANK

Pat Tosie

**This crazy year  
is still crazy but  
we are  
swimming with  
the current the  
best we can.**

**It appears that  
we won't have any  
face to face meetings  
until next year, no  
awards banquet at this  
time and maybe even a  
few months into next  
year before we can all  
get together.**

**We have a couple  
of exciting things that  
we hope will still  
happen, as **MASi**  
will host the  
American Killifish**

**Association 2021 Convention** June 10th through the 13th and then **we will host the 2021 American Cichlid Association** July 23 through the 25th so we will be front and center of the organized fish hobby in the United States! We will need a lot of help and it will be the best place to be to meet fish hobbyists from all over and have the opportunity to get some of the newest and best fish available.

**Currently, our membership is over 180 strong** and we can use each and everyone to help out and make these events the best that they can be.

**I want to thank a couple of people who have helped out tremendously for a long time** but who need to step down from their positions to do other things and give an opportunity to others to get involved.

**First is Ed Millinger who is our Membership Chairman** and has always stepped up to help out when the need is there, **Thank You Ed!**

What this means is we need a new membership chair to take memberships and renewals at the meetings and other club functions, keep the membership roster up to date and give out the membership cards.

**Next is Kathy Deutsch who has been our Exchange Editor** and reviews other aquarium societies publications to find any other club reprints or mentions of MASi's authors and lets us know who and where they were published. The Exchange Editor also finds articles in other publications that would be worth reprinting in The DARTER.

**Thank you Kathy for a job well done.** If you like reading the newest things available, this may be a job for you.

**If you are interested in either Membership Chairman or Exchange Editor, please talk to me or any of the council members.**

**I look forward to the face to face meetings coming back when things are  
safe again and can again enjoy getting together to talk and show our  
wonderful fishy pets.**

**Keep looking below water....**

Chuck Bremer

## FROM THE EDITOR

### We're Baaaack!!!

**This is one of the biggest Darter editions yet-** 50 pages - and in the midst of a Pandemic! We are adapting and changing to meet the times.

**We are back on track with informational programs.** Three are described in this issue. We have also adapted the monthly bowl show to Social Media which actually give more folks an opportunity to see some of the best fish being kept in the club than if they were displayed at a F2F meeting. We're getting more participation because they're less trouble than having to physically submit the fish to the vagaries of transport during the winter months.

One of the articles presented here is a result of a posting on Social Media as are other tidbits.

**We've also maintained the BAP and HAP programs** using the system of Bag for Bag Parking Lot Swaps.



**Help MASi adapt  
further and give your  
feedback and ideas to a  
council member, or  
join a council meeting  
as a Guest by  
requesting an invite  
from our Webmaster!!**

**Content deadline for the First Darter of 2021 is January 11th.**

Send Feedback and Letters to the Editor to: [editor@missouriaquariumsociety.com](mailto:editor@missouriaquariumsociety.com)



# MASI New Memberships for 2020!

Chad Brockmeyer	Raymond, IL
Richard W. Clasen	Chester, IL
Benjamin Cook	St Louis, MO
Richard Crowell	Carlinville, IL
Julia Cross	Foristel, MO
Sarah Hanley	St Louis, MO
Leonard Hayes	Chesterfield, MO
Cory & Lauren Johns	Oren, MO
Cory Mignard	Springfield, MO
Richard Mueller	St Charles, MO
Langen Neubacher	St Louis, MO
Jesse Soto	Kansas City, MO
Stephanie Stephan	Oakville, MO
Richard Svoboda	East Alton, IL
Joshua Waschak	Chesterfield, MO
David Zink	Normal, IL

New Members  
since the  
September  
Darter!



A paid  
2020

Membership  
includes 2021  
Gratis!

185 Members  
So Far in 2020!

Also **NEW**: Check out MASI's  Presence



Know Your Speaker: Karen Randall



MASI Member Spotlight:  
Charles Harrison

Go on over, look around and get acquainted. Subscribe for notice of new videos as they are posted. There is where the Missouri Aquarium Society's monthly Webinar happens!

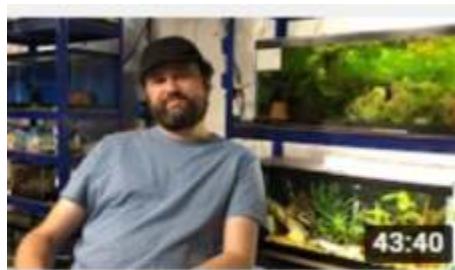
You'll go there to hear Andy Piorkowski discuss the Goodeids of Mexico this month.

The plan is to post about one video per week! Jake would be glad to give other members a chance to see your Fish Tanks. Just let him know.

There are many MASI (unrelated) YouTube channels out there but Google knows our site by this long URL:  
<https://www.youtube.com/channel/UCv7eon-2M7w1qeowV4WI17g>

But go there much more easily by just using this easier to remember one:

[TinyURL.com/MASI-video](http://tinyurl.com/MASI-video)



MASI Member Spotlight:  
Steve Coxon's fishroom/fish...



MASI July Swap PLUS Jerry Jost Corydoras fishroom

Btw, these thumbnails are also linked to the channel!!



**MASI General Meeting - FREE  
Webinar: 7:30 PM CT, Thurs,  
November 19<sup>th</sup>, 2020!!**



**Andy Piorkowski:  
Goodeid  
Livebearers:  
Natural History  
and Husbandry**

Andy will discuss the Goodeids, an endangered fish family of Mexico. Goodeids, some of the rarest fish in the world, are

beautiful creatures that are becoming increasingly rare in the wild and in the hobby.

This in-depth discussion covers the classification, summary and description of morphological characters and groupings within the Family Goodeidae and the difficulties facing some of the rarest or most endangered fish. Conservation programs will be discussed.



Actively engaged in long term species maintenance, there are currently more than 40 different types of goodeid in Andy's fish room, likely one of the largest private collections of these rare fish to be found anywhere. Learn how he maintains the tanks and varied diets required.

**MASI**



Channel  
[Tinyurl.com  
/MASI-video](https://tinyurl.com/MASI-video)

Andy says: "I'm a scientist, having always loved animals that swim, I got my start in the hobby with turtles almost 30 years ago then shifted focus to fish keeping in planted tanks. A lifelong love of learning and the natural world brought me to where I am today."

Andy Piorkowski is an active member of the Chicago Livebearer Society (CLS) and the American Livebearer Association (ALA) and well known for his active Goodeid YouTube Channel with over 2500 subscribers. He is a Contributing Editor for the Journal of the American Livebearer Association and author of several of the CLS' Livebearer Profiles.

**Replaces suspended November F2F meeting**



# MASI General Meeting FREE Webinar: 7:30 PM CT, Thurs, December 17<sup>th</sup>, 2020!!



# Joe Faszl: Water Quality

## Water Quality: The Fundamentals.

We keep water and its care is as important as the care of the fish in it. Joe will concentrate on fundamentals of water testing and associated water changes that apply especially to fresh water.

Joe will discuss water sources, how to remove "Bad Stuff", and the pros and cons of RO/DI (Reverse Osmosis/Deionized) water. He will discuss maintenance, including the importance of water changes - even in saltwater, how they affect the balance in the tank and handling the waste water.



Ample time will be allowed for Q&A through the YouTube side chat and assistance of the moderator.

**JOE STARTED A pursuit of saltwater aquariums in 1977** with a 15 gallon metaframe aquarium. In 1986, he moved up to a 55 gallon aquarium with crushed coral and an "advanced" reverse flow under-gravel filter. Later, Albert J. Thiel's book, *Small Reef Aquarium Basics*, began his quest to keep saltwater animals by creating the conditions allowing them to thrive.

He and his team at Saltwater Seascapes design and install aquarium systems from 5 to 5500 gallons. They have pioneered the production of live foods for aquarists, developed several food products, and continue to learn how to create more robust systems to make care for saltwater ecosystems easier.



[Tinyurl.com  
/MASI-video](https://tinyurl.com/MASI-video)

**Replacing suspended F2F meeting**



# MASI General Meeting FREE Webinar: 7:30 PM CT, Thurs, January 21st, 2021!!



## Heather Burke: Danios and Danionins



### **"Danios and Danionins: The appreciation and breeding of small cyprinids"**

The past decade has been an exciting one for die-hard Danio enthusiasts as more species of Danios became available in the hobby. This talk highlights some of the new and interesting species and offers discussion of general care and breeding of Danios. Select species of other small cyprinids will be discussed including firsthand accounts of reproduction for such species as: *Danio aesculapii*, *Celestichthys margaritatus*, *C. erythromicron*, *C. choprae*, *Danio tinwini*, and *Barbus hulstaerti*. She will also discuss her insights into the classic model organism/research animal, "*Brachydanio rerio*", in the laboratory setting.



### **28 year old Heather from Charlotte, MI,**

has kept and bred fish for most of her life and harbors a keen interest and passion for the aquarium hobby. Active in aquarium societies since the age of 14, she has spawned over 40 species of freshwater fish and invertebrates as a member of two local clubs. Her interests in fish are broad- ranging from nano species of cyprinids to wild-type livebearing fishes and dwarf cichlids. She was employed with Preuss Pets in Lansing until graduating in Fisheries and Wildlife from Michigan State University in 2016, then worked for the University of Michigan as a fishroom tech at a Zebra Danio lab. She currently works in the expanding aquatics department of Josh's Frogs, an online pet retailer.



[Tinyurl.com  
/MASI-video](https://tinyurl.com/MASI-video)



# Moved to 2021...

**The MASI Executive Council has made Program adjustments for 2020.**

**The eagerly awaited Awards Banquet and Fish Bucks Auction is being pushed to 2021 and will combine 2019 and 2020 Awards and Rewards into a single fun filled night. Look for rescheduling after we can determine how the COVID pandemic affects 2021.**



**The Annual Christmas Party, another tradition normally replacing the December speaker was also pushed to a Spring Event in early 2021. There will be a December Webinar speaker to keep you in the Fishy mood.**

**MASI has given all current 2020 members an early Christmas present by extending 2020 dues through 2021! If you're paid through 2020, MASI Membership is for FREE in 2021!**





# COUNCIL MINUTES

Executive Council

**The voting portion of the Executive Council consists of 4 elected officers, 6 elected council members and the 3 appointed positions: Auction Chair, Editor and Show Chair.**

On page 2 are contacts for the current Executive Council and other Committee Chairs and Service positions within our Club. Please provide input to anyone or to attend the Council meetings yourself.

**Members are invited to attend the Council meetings to bring up issues, contribute to the discussion or just to see how they are run.** Meetings are currently being held by invitation on the ZOOM platform. Contact the Webmaster ([Charles@inkmkr.com](mailto:Charles@inkmkr.com)) if you desire an invitation.

**Next Executive Council Meeting:**

**November 23, 7:30 PM on Zoom**

## Give the Council your Feedback or Support!

### COUNCIL MEETING

8/27/20



Pat Tosie called the Zoom meeting to order at 7:12. Present were Gary Lange, Jack Heller, Angela Hellweg, Ian Eggert, Charles Harrison, Jake Harris, Mike Huber, Caleb Pittman, Mike Hellweg, Chuck Bremer, and Chris Mohrle.

### ANNOUNCEMENTS

- The next Council meeting is Sep 24 at 7:30.
- The Members only Bag Swap is Sep 13 at 10:00 at Jost Chemical parking lot.
- The MASiC Banquet is Nov 14.

### REPORTS:

- **SECRETARY:** Angela read the Minutes from the July meeting. A

motion to approve was made by Mike Hellweg and was seconded by Ian Eggert. The motion passed.

- **TREASURER:** Jack read the Treasure's report. A motion to approve the amended report was made by Chuck Bremer and was seconded by Charles Harrison. The motion passed.
- **EDITOR:** The Sep/Oct Darter will go out on Sep 14. Chuck would like to highlight local shops in the Darter. Chuck said he will contact the Motor City club to request that they do not send the Darter out to their members.
- **ACA CONVENTION:** Pat said that the website is now up.
- **AKA CONVENTION:** Jack said that vendors are being signed up.
- **AUCTION:** The next auction is Nov 8th, pending COVID restrictions.

• **BOWL SHOW:** The online bowl show process needs to be streamlined.

• **YOU TUBE CHANNEL:** Jake would like to post speaker interviews prior to their speaking engagement. A motion to spend up to \$200.00 to upgrade our StreamYard platform was made by Mike Hellweg and was seconded by Ian Eggert. The motion passed.

### OLD BUSINESS:

- None

### NEW BUSINESS:

- The 2020-21 FORC budget meeting needs to be scheduled
- The next face to face General meeting would be Nov 19, pending COVID restrictions.

A motion to adjourn at 8:28 was made by Charles Harrison and was seconded by Mike Huber. The motion passed.

**This Council Group Email Address reaches all the Executive council at once: [Council@MissouriAquariumSociety.com](mailto:Council@MissouriAquariumSociety.com)**





## COUNCIL MEETING

9/24/20

Pat Tosie called the Zoom meeting to order at 7:42. Present were Gary Lange, Jack Heller, Angela Hellweg, Ian Eggert, Charles Harrison, Jake Harris, Holly Paoni, Caleb Pitman, Mike Hellweg, Chuck Bremer, and Chris Mohrle. Our guest was Kathy Deutsch.

### ANNOUNCEMENTS:

- The next Council meeting is Oct 22 at 7:30.

### REPORTS:

- **SECRETARY:** Angela read the Minutes from the Aug meeting. A motion to approve was made by Mike Hellweg and was seconded by Ian Eggert. The motion passed.
- **TREASURER:** Jack read the Treasurer's report. A motion to approve was made by Mike Hellweg and was seconded by Charles Harrison. The motion passed.
- **EDITOR:** Deadline for Nov/Dec Darter submissions is Nov 9.

- **BANQUET:** No one has signed up for the Nov 14 Awards banquet yet.
- **ACA CONVENTION:** Pat said that the speakers and schedule is on the convention website, and the bank account has been opened with \$500.00 from the MASI savings account.
- **EXCHANGE:** Some clubs are no longer issuing publications.
- Kathy Deutsch needs to receive exchange information. It is currently still going to Debbie Sultan.
- **POINTS TABULATOR:** Kevin Wise has not received anything from Melanie so far.
- **SOCIAL MEDIA:** Steve Coxon has been added as a moderator on the MASI Band site.
- **SPEAKERS:** Gary has monthly speakers lined up for the rest of the year.
- **YOUTUBE:** Jake would like to do fishroom tours and post video from the Bag Swap. The possibility of having sponsor ads was discussed.

### OLD BUSINESS:

### NEW BUSINESS:

- The 2020-2021 FORC budget meeting is Oct 1 at 7:30 on Zoom.
- Midwest Tropical would like to donate items to MASI for swap or auctions.
- A motion to spend up to \$180.00 for 1 year of Zoom was made by Holly Paoni and was seconded by Caleb Pitman. The motion passed.

A motion to adjourn at 9:09 was made by Charles Harrison and was seconded by Ian Eggert. The motion passed.



# MASI Event Report:

November 8th, 2020



## Bring a Bag, Take a Bag, Swap!

### The Missouri Aquarium Society's BAP/HAP Parking Lot Swap was again a success!

We have successfully been able to continue the Breeder's and Horticulturalist's Awards Programs, although COVID is still here, with reduced risk. Serious hobbyists continue to have avenues for new fish and plants that they would otherwise not have access to.

**A BIG thanks to Jerry Jost of Jost Chemical** again for providing an excellent venue for the event where everyone could be easily socially distanced and as safe as possible during the event. Everyone wore masks and the event went quickly, complete in just over an hour.

**Welcome to everyone!!** There were 32 members attending the November event, some even new members joining within the past 3 days to take advantage of more interaction with the club. Queried at check in those said they had been associated with MASI for some time, such as auctions, and felt it was time they became a paying member to support the club better and maybe reduce their own increasing hobby withdrawal symptoms.

Of nearly 150 bags exchanged overall, paperwork was submitted for 27 BAP and 11 HAP. At least 3 said they didn't get to finish all the paperwork but may submit it by email soon.

**There was something for everyone**, no matter what your fishy interests. Lots of fish and plants difficult to come by in the area, many not available at all in Local Fish Shops (LFS) and some outright rare in the hobby as a whole.

From fish big enough to serve for lunch to tiny rare ones and everything in between. Red Bushynose *Ancistrus*, several rare killies such as *Aphyosemion australe* and unusual dwarf cichlids such as *Aistogramma njisseni* and other species paired up and ready to be spawned. There were no *Betta splendens* but several other, less available anabantoids such as *Betta rubra* and *Dario dario*. Some really nice locally tank raised plants, *Anubias*, *Cryptocoryne* and many other families. Even some very rare in the hobby, a Blue eye - *Pseudomugil mellis* and the most colorful Gulf Coast Pygmy Sunfish- *Elassoma gilberti*. Several species of CARES fish, those relying on the hobby to maintain their very existence, were further distributed.

**Thanks to everyone for helping MASI support  
the Aquarium Hobby!!**





## EXCHANGE EDITOR's CORNER

Kathy Deutsch- FishWhisperer

**It is always eye opening to see the continuing quality of the exchanges with other clubs.** Every exchange I see is at least entertaining and colorful.

**Contact me if there is an article you would like to read.**

**This is an interesting position in MASI.** I enjoy it. However, it is hard for me to keep up, due to other commitments so I am stepping down and have asked our President, to find a replacement. **If you think this might be a job you would enjoy, please contact Pat.**

**Thanks for reading! *Kathy Deutsch***

### ◆ North Jersey Aquarium Society September 2020.

- Dr. Paul Loiselle about *Rhabdalestes septentrionalis* (a small African tetra). As is usual with Dr. Loiselle's work, it is both entertaining and educational.

### ◆ Raleigh Aquarium Society October 2020

- Spawning article: "My Green Corydoras (*Corydoras Aeneus*) Spawning Experience" by Kristin Bryant. Nice first person account with lots of tips.

### ◆ Bucks County Aquarium Society October 2020

- **A MASI MEMBER REPRINT!** "Axolotls in Your Home, *Ambystoma mexicanum*, the Mexican walking"fish" by Edgar Valencia Morales **CONGRATULATIONS!**

### ◆ Kitchener-Waterloo Aquarium Society October 2020

- The continuing saga of building "Fish Room Lounge 2020" By Zenin Skomorowski KWAS "Part 2: Building stands and moving in the Aquariums" Lots of photos and a detailed explanation of the work. It's an easy read, enjoyable.
- Setting up a River Tank by Glenn Roberts. This article "Setting up a River Tank" by Glenn Roberts has photos and explanation as well. Both articles are intriguing even if you aren't going to build a riverine tank (or a fish lounge). Except most people reading this would be considering both.

### ◆ Greater Seattle Aquarium Society October 2020

- A main article called "The Mystery of the Mystery Plant" by Roy Slettevold. It's about a plant he acquired for the Horticultural Award Program. It was not what he thought it was, and he describes tracking down the plant's name.

### ◆ North Jersey Aquarium Society October 2020

- Starts with a cool article by Ted Coletti "How many fish guarantees a pair?" It has graphs, and for a geek like me, it was fun to read.
- Dr. Loiselle has another entertaining article on a specific fish "*Trichromis salvini*" Mexican cichlid.
- Finally, Chuck Davis has a short article "SOME CICHLID OBSERVATIONS". About cichlid behavior in the canals of Florida.

### ◆ Motor City Aquarium Society November 2020

- An enjoyable article about cherry red shrimp "My Cleaning Crew By Dave Costa "

### ◆ Greater Seattle Aquarium Society November 2020

- Breeding *Synodontis lucipinnis* by Steev Ward has an easy-to-read account of the breeding and the habits of these fish. It was a fun read.

### ◆ Greater City Aquarium Society November 2020

- "*Sarotherodon knauerae*" by Joseph Graffagnino. It's a West African dwarf tilapia species. Nice description and breeding article.
- I love me a triggerfish, so "The Ocean Triggerfish" by Stephen Sica (a travelogue plus information) got me wishing I was doing saltwater again.
- Joseph Graffagnino weighs in again with "*Xenotoca lyonsi*" about a livebearer I was just learning about.
- Dan Radebaugh's "The Uaru(s)" has a great write up about one of my favorite fish.





## MEMBERSHIP CHAIRMAN

Ed Millinger

memberships are good through 2021 so next year should be a breeze.

**You will be expected to attend all monthly meetings and MASI events.** if you would be unable to make them all I would be willing to fill in for you. Starting around October and November of next year folks will start renewing their memberships.

**The busy part of this job starts with the January monthly meeting of 2022,** the February auction and the February general meeting. While a great majority of people use the PayPal option many still pay by cash or check. You will want to have 15 to 20 five dollar bills if the yearly dues remain at \$15 because you will receive many 20 dollar bills. In the past I have asked for tens and fives (through social media posts) from anyone joining or re-upping and received a good response.

**New members are required to fill out a membership form** and those re-upping are asked if all their contact information is unchanged. Because the Dater is now electronic, getting the correct e-mail is of utmost importance. If you have any questions ask at this time so you don't have to call them to double check the accuracy of the e-mail address.

**At the end of meetings and events you will turn the money collected over to the treasurer.** Our editor will take a picture with his phone of any new membership forms submitted and your recorded renewals in the membership book. Since he sends out the Darter he can also maintain a list and is very good at communicating with you on any new members joining through PayPal. You can also sign up to be notified of PayPal memberships.

**Occasionally you will receive a check in the mail,** you just email the Editor the contact info and hand over the check to the treasurer at the next event.

**All in all it is a great way to meet all the members and become invested in the operation of this great aquarium society. If you have any questions fell free to contact me**  
[amazoneddy1@yahoo.com](mailto:amazoneddy1@yahoo.com)



I feel like a broken record!

## MASI AUCTION MESSAGE

Mike Hellweg

**Okay, let's try this again.** Hopefully we'll be able to have the annual Winter Auction on February 28, 2021 as planned. Watch our webpage and social media to see how things go as we get closer.

**Of course, this is pending no further worsening of COVID 19 in our area.** As I said last time - in the meantime stay in your fishroom, change lots of water, and if you go out, wear a mask!

**Watch the Facebook page, Band page, website and your email for updates as we get closer.**

And for now, 'nuff said,

Mike

[auction@missouriaquariumsociety.com](mailto:auction@missouriaquariumsociety.com)



# MASI 2020 Challenge Extended through 2020 & 2021!!



**CONSERVATIONFISHERIES**  
PRESERVING THE SOUTHEAST'S AQUATIC BIODIVERSITY  
KNOXVILLE, TN



CFI is a non-profit, 501(c)3 organization in Knoxville, Tennessee, dedicated to the **preservation of aquatic biodiversity** in our streams and rivers. They develop techniques to propagate nongame fish, including some of the **most imperiled species** in the region and the first facility in the Southeast to do so.

CFI's primary goal is to **restore fish populations** that have been eliminated because of pollution or habitat destruction but also produce many rare or difficult-to-collect species for other purposes related to aquatic conservation.

**Jack Heller has Challenged MASI to help support this worthy entity as they support our native fishes!!**



**GOAL:  
\$2000+**

**Featured species profile: © CFI**

## ***Etheostoma marmorinum* | Marbled Darter**

**Until recently, the Marbled Darter was part of the complex known as Duskytail Darter.**

Blanton and Jenkins (2008) recognized that this complex was actually four species. The Marbled Darter is currently known only from Little River in Blount Co., TN. The species is also known from a single specimen collected in the Holston River in 1947, just three years before the closing of the dam, creating Cherokee Reservoir. This inundated the darters' habitat and no specimens have ever been found elsewhere in the Holston.

**The lower sections of Little River, where this darter is found, are severely impacted** from a number of sources. CFI has been involved in trying to establish a population of this extremely imperiled darter using propagated fish further upstream in Little River, above some of the most degraded sections of river. However, suitable habitat upstream is rare and no evidence suggests that our efforts have succeeded to date. We are still in the early stages of this project, and hopefully we can accomplish our goals in time.





CHRIS

Bowl Show

[propagationaquatics@gmail.com](mailto:propagationaquatics@gmail.com)

# Virtual Bowl Show Winners



HOLLY

Social Media

[hpaoni@gmail.com](mailto:hpaoni@gmail.com)

**Our Bowl Show is now ONLINE**, and can be found under our pinned notices in our Facebook discussions group- <https://www.facebook.com/groups/MissouriAquariumSociety/>. There are 2 classes each month, each in their own pinned post.

We want this to be a fun and easy way to participate in the club, while we aren't able to meet. You also earn bragging rights, fishy bucks, and may see your photo fish on the cover of a social media group and in the Darter.

**We hope to see everyone enter the contest soon!**

## September Winners

### New World Cichlids

Place	Aquatic Critter	Keeper
1	<i>Aristogramma Cacatuoides</i> - M	Steve Coxon
2	<i>Cichlasoma bocorti</i> - M	Pat Tosie
3	<b>Gold Saum</b> - M	Floyd Conrad
3	<i>Aristogramma njsseni</i> - M	Jake Harris
<b>Honorable Mentions:</b>		
	<i>Aristogramma cacatuoides</i> - M	Jake Harris
	Jack Dempsey - M	Floyd Conrad

### Open Class - Your Best Fish

Place	Open	Keeper
1	<i>Melanotaenia</i> sp. Kali Myesiu	Gary Lange
2	<i>Melanotaenia</i> sp. Lengguru	Gary Lange
3	<i>Melanotaenia etnaensis</i>	Gary Lange

Each entry earns 1 Fishy Buck.

- 3rd Place gets 3 bucks,
- 2nd place gets 4,
- First Place and peoples choice get 5 fishy bucks.

Anyone can have 5 entries per month...

So start collecting those fishy bucks, for our awards banquet fishy buck auction.

Get those entries in. ;-)

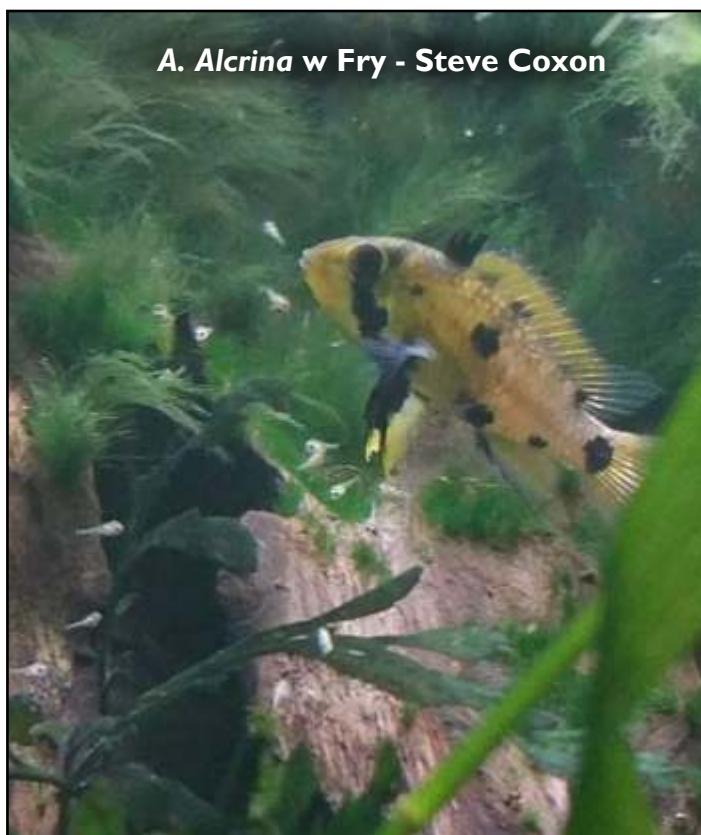
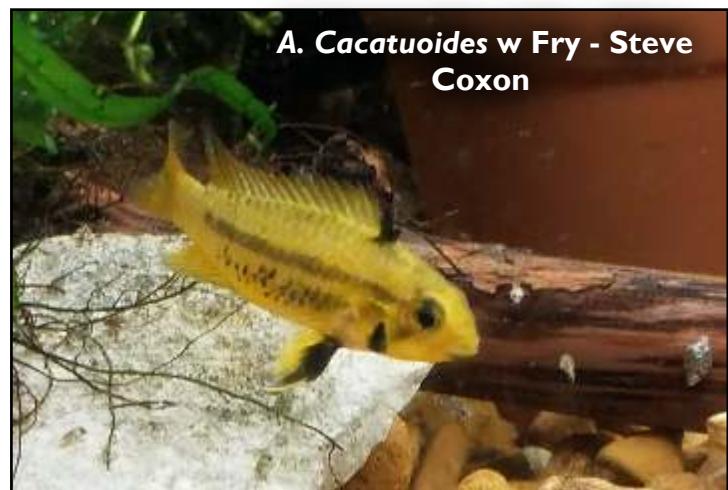




# September Virtual Bowl Show Winners

## Cichlids of South and Central America





**September photos of  
Apistogrammas and other  
Cichlids. These are  
smaller than their  
pictures!**





Jack Dempsey - Floyd Conrad Sr.



Midas Cichlid - Floyd Conrad Sr.



Texas Cichlid - Floyd Conrad Sr.



Archocentrus spiluras - Pat Tosie



Heros notatus -  
Amy Bennett



Amanitita nanolutea - Steve Coxon

**September photos of Central and South American Cichlids that are larger than their pictures...**





**... and more  
September  
photos of  
Central  
and  
South  
American  
Cichlids larger than  
their pictures!**

**Hey! It's not easy raising these fish  
nor taking their photos!!  
Give it a try!!**



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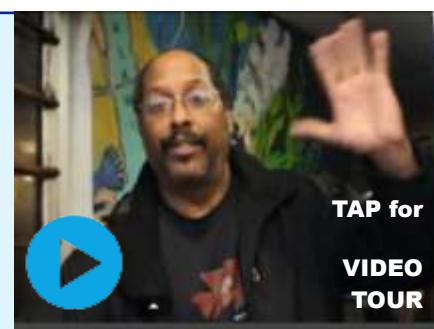


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## September Open Class - Your Best Fish

Place	Open	Keeper
1	<i>Melanotaenia sp. Kali Myesiu</i>	Gary Lange
2	<i>Melanotaenia sp. Lengguru</i>	Gary Lange
3	<i>Melanotaenia etnaensis</i>	Gary Lange



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**SUNDAY 11:00PM-6:00PM**  
**CLOSED MONDAY**





# October Virtual Bowl Show

## Rainbowfish

Place	Open	Keeper
1	<i>Melanotaenia goldiei</i>	Gary Lange
2	<i>Melanotaenia trifasciata</i>	Gary Lange
3	<i>Chilatherina sp. "Kali Web"</i>	Gary Lange
3	<i>Melanotaenia trifasciata</i>	Gary Lange
People's Choice		
	<i>Chilatherina sp. "Kali Web"</i>	Gary Lange
Honorable Mention		
	<b>Neon Praecox</b>	<b>Matt Seggerman</b>



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# There's still time to enter the Month's Virtual Bowl Show on MASI's FaceBook Discussion Group

[Link to Rules and Placement](#)

## NOVEMBER -

 **Class A** - Cyprinids: Barbs, Danios, Rasboras, Minnows, Goldfish



**November's Class B is favorite fish gadgets.** This should be something fun, will give folks some ideas and get discussions going. All entries should give a short explanation of what is shown, how it's used, and what led them to create or build it.

The "winner" would be declared by people's choice

 **Class B** - Your Favorite tool or hobby gadget

## DECEMBER -

 **Class A** - Anabantoids: Bettas, Gouramis, Ctenopomas, etc. (excludes fancy finned bettas)

 **Class B** - Holiday inspired tanks

## JANUARY -

 **Class A** - Aquatic Critters/ Oddballs Sharks, Loaches, Eels, Oddballs, and fully aquatic Amphibians

 **Class B** - Shrimp & Snails

## FEBRUARY -

 **Class A** - Old World Cichlids

 **Class B** - Hobby Related Art. Must be made by person submitting

and indication from which entry gets the most reactions, or discussion.

A goal would be to compile these entries into a Darter article and make them permanently available.

### December's Class B is Holiday themed tanks.

For sure these are going to be nearly impossible to judge as aquascapes so we would also like to make this entire category a people's choice determination.



## SHOP HOPPING - St Louis Area, 2020

**These Local Fish Shops (LFS) help introduce hundreds of people to the Aquatic Hobby every day.**

They also help the Missouri Aquarium Society reach those hobbyists and keep them engaged by promoting our programs. **Support their programs too!**

**Happy Fish Shopping!**

*The Missouri Aquarium Society*



Local Fish Shop	Location	Phone
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Corals-n-More	St Peters, MO	(636) 387-1212
Petland	Lake St Louis, MO	(636) 685-2925
Malawi Aquatics	Florissant, MO	(314) 830-6460
Midwest Tropical Fish	Jerseyville, IL	(618) 946-7408
Pet Connection	St Louis, MO	(314) 773-7387
Petco, N Lindburgh	Florissant, MO	(314) 839-5136
Sailfin Pet Shop	Champaign, IL	(217) 352-1121
<b>Support Your Local Fish Stores</b>		
Seascape Studios	St Louis, MO	(314) 843-3636
Tropical World Pets	Webster Groves, MO	(314) 849-4020





## Interacting with the Missouri Aquarium Society on Social Media

There have been changes on the Social Media scene for clubs like ours and MASI has seen fit to explore other Social Media platforms. Below is a run down of where to find information and social interaction within our Society.

- **Missouri Aquarium Society's Home page** -

<https://missouriaquariumsociety.com/> - Used as a reference page for our activities with direct links to information about ongoing or upcoming programs and membership information. Go here to join or renew MASI membership or to get details about an upcoming event.

- **MASI BAND Main page** - <https://band.us/@masicloud> - BAND is a newly

discovered App for many societies such as ours. It is a bit more open than Face Book and easy to join and share information within and with others, even for non-BAND members. Discussion so far appears to be open and generally freely supported. This is a Public MASI Group on Band that can be used to post upcoming events and to have general Aquatic Hobby discussions. Use this page to show off your hobby, interact with others about it or to ask Hobby related questions.

- **MASI BAND Swap page** - <https://band.us/@masiswap> - Because of nefarious

activity by non-identified attackers, this is now a CLOSED Group specifically for discussion and posting about upcoming MASI SWAPS and other sales efforts by members or others with approval on BAND. Post any sales, rehomes or other livestock exchanges. Do NOT post these to FaceBook.

Those wishing to join will need to register with BAND, and then ask to join the group. It's not hard, it's just a name, email or phone #, a confirmation text or email. Then request to join, answer the 3 simple questions I have set up, then once Jake or I approve them, they are in.

- **MASI FaceBook Main page** -

<https://www.facebook.com/MissouriAquariumSociety/> - We still use this page as a posting location for general MASI information and about upcoming events. Visit it to find the latest postings about what we're doing.

- **MASI Facebook Discussion Group** -

<https://www.facebook.com/groups/MissouriAquariumSociety/> - This is a discussion group that can be joined by FaceBook account holders and is useful for exchanging information about care of fish, setting up tanks, etc. To keep MASI in compliance with FB policy, DO NOT discuss sales, trading or even rehoming of any livestock on that platform. Those posts WILL be deleted. Use one of the BAND groups mentioned above.

**When posting or sharing on any portion of any Social Media platform, always consider them to be public and readily readable by anyone. Please let Club meeting rules apply: Keep it PG and respect others and their feelings. We want to encourage others, including kids, in the hobby. Post about hobby related items and questions but do not attempt to sell or transfer any legally banned or prohibited species. (If you can't legally sell it at an auction, do not post it on social media.)**

If you have any ideas, questions, suggestions or concerns, please feel free to contact our Social Media Chair, Holly Paoni, email [hpaoni@gmail.com](mailto:hpaoni@gmail.com).

**Click or Scan to go to the Site:**



**Please note, from lack of use and to consolidate our Social Media presence, the Council has retired the FORUM.**

# ...Guidelines for Electronic Communications (Includes Social Media)

## From Missouri Aquarium Society's Member's Handbook

(These refer to) the online forums for the Missouri Aquarium Society, Inc. (MASI), its members and guests. Ability to post is a privilege, not a right. This is private society forum – there is no right to free speech here.

Moderators retain the right to delete any post or topic deemed inappropriate. The following rules are not all inclusive and may change without notice.

- Topics are limited to society related events, questions, and comments, as well as fish, ponds, plants, equipment, hobby, and other related things only.
- This is a family group. Parental supervision of minors is strongly encouraged. The following things are forbidden and subject the poster to immediate revocation of posting privileges: spam; obscene or pornographic posts; foul language; personal attacks, even in jest; libelous or slanderous comments about any person or entity; political or religious commentaries, attacks or appellations to posts.
- Any offending posts will be deleted from the forum archive and poster's ability to post will be removed without further comment.
- Links to fishy video clips and fishy photos are acceptable, as long as they are "G" rated. Feel free to share your breeding experiences or your attempts at fish photography.

Please realize that most Internet users do not have broadband connections, so limit photos and other clips to a small file. A link to a photo/video hosting site is recommended.

- Fishy humor is welcome IN MODERATION. Please restrict joke/cartoon posts to hobby or fish-related ones only, and keep them to a minimum as many people do not enjoy receiving a barrage of jokes every day. There are other forums for that. Please realize this is a family list so keep these things "G" rated. Also, please do not post joke lists or forwarded joke lists. Everyone gets them. Don't waste everyone's time resending them.
- Please do not forward anything to this list. Bill Gates is not going to give anyone a million bucks if they forward an email or click on a link; getting people to sign online petitions is useless as no corporation or political entity takes them seriously; and there is no magic chain letter that will bring riches if it is forwarded to 10 friends.
- If you see a problem at a retailer, bring it to the attention of the management there or to the ownership immediately, don't post it here. Posting it here won't fix the problem – bringing it to the attention of management or ownership almost always will. If

this does not correct the problem, report it to the proper authorities: the local SPCA, the local police, the local BBB.

- (On platforms that allow) Members (including MASI sponsoring shops) are allowed and encouraged to post hobby-related items for sale, trade, or wants.
- Anyone who has questions about the website or this forum should direct it to the moderator off-list, not to the list. Anyone with comments or complaints about MASI operations or events should direct those to the appropriate committee heads, or directly to a member of the Executive Council. Contact information (phone numbers and email addresses) is provided on the Mast Head page of the Darter, the official publication of the Missouri Aquarium Society, Inc.
- All opinions expressed on *any* (*the FishHeads*) forum are strictly those of the person making the post. MASI does not endorse any writer or opinion, including those of its Officers, unless they are speaking with the official endorsement of the majority of the Executive Council.

Anyone failing to abide by these rules will be suspended or permanently removed from this list at our option. The decision of the moderator(s) and of the MASI Executive Council is final.



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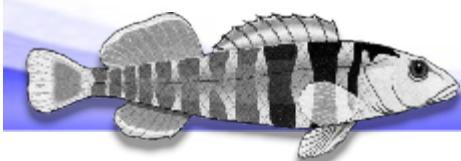
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## Hatching the Original “Ancient Mariner”

# Triops!

By Rick Renfro

**M**Y TRIOPS EGGS were purchased from a seller on eBay, who happened to be in the Czech Republic. The purchase contained 300 - 500 Triops eggs and 500 Fairy Shrimp eggs.

**Triops eggs are available many places** online and can often also be found in the novelty shops at many Natural History locations or museums



such as the St Louis Zoo and the St Louis Aquarium. The species most often available, *Triops longicaudatus*, is the one I received.

**I used two tanks, one for hatching and another to keep the colony.**

**Hatching Set Up:** The hatching tank is a medium Kritter Keeper with no cover. They live in fresh water, and I suppose the best water to use is boiled rain water, or spring water. I used tap water that had been treated

**Ed Note:** I saw Rick's 7 day video displayed on MASi Social Media and asked him to write this short article. Triops are ancient, one of the oldest living fossils on earth and date to before the Dinosaurs almost unchanged. Triops means 3-eyes in Greek. Although a water creature, their eggs can remain in a desiccated state for centuries, maybe millennia, and are often found even in desert locations.

**Like annual killifish**, Triops undergo a rapid living cycle whenever there is enough water to hatch and complete development before the next dry period. In Rick's colony they began to lay eggs at less than two weeks!!

Check out more reading in these references:

**Wikipedia:**

<https://en.wikipedia.org/wiki/Triops>

**Tropical Fish Hobbyist:**

<https://www.tfhmagazine.com/articles/freshwater/triops-ancient-wonders-full-article>





**Video at 12 days showing adults laying eggs.**

with AquaScience Ultimate and then sat for 2 days.

**To hatch they need warm water and a high light to mimic desert pools.** The need for heat is obvious, but an interesting thing about the light is that if it is not strong enough, the eggs will remain dormant, even in water, because lower light indicates the egg is too deep in the substrate of the desert pool. Eggs can remain dormant for decades.

In the hatching tank, place 2-3 inches of water and some form of dry organic material such as coconut husk or crushed leaves. They hatched within 24 hours and were about the size of a baby Brine Shrimp. The video is from the seventh day.

**The colony is now in 10 gallon tank** with pool filter sand substrate, a heater, and a large box filter. The temperature is a constant 78 degrees. I turn off the lights at night, but leave them on all day to promote algae growth.

They molt a lot, maybe every day at this stage. I remove their cast shells every other day.

**Newly hatched Triops will eat** from the organic material the first day, then I fed powdered flake food. They eat anything, and a lot of it. They are eating an one algae or two meat eater wafer, a 1/2 teaspoon of my mix, and a 1/2 teaspoon of crushed egg shell every day. I mix growth pellets, golden pearl, larger meat and algae pellets which I feed my other tanks.

**They pounce on the egg shell before the other foods** and eat it all within an hour, that surprised me. I have not seen them eating much on the plants, but they get quite a lot of other foods.

**The day this is written is day 9.** The 10 gallon tank was a new set up, but I initially used a seasoned filter and water from another tank to start it up. I ran the larger tank for the 3 days I kept the fry in the Kritter Keeper, then added the little Triops.

**Triops grow noticeably daily.**  
The largest is now almost an inch- on only day nine of my first generation!

I will be watching for sites that eggs are laid, but anticipate drying all of the sand after they expire in a few months and collecting the eggs at that time.

**As far as the hatching process, both Triops and Brine Shrimp seem to be fairly simple.** However, I have failed at raising adult Brine Shrimp so far, even though I have hatched many large batches of BBS for fish food.

The process of hatching and raising Triops is definitely more interesting as a spectator, and much easier than Brine Shrimp.

**My family has mixed reviews about them,** the kids love to watch them and are pretty amazed by the whole process and I think the speed of the Triops' life cycle holds their interest since the creatures are different every time they see them. My wife, though, thinks they are water-roaches and makes a face and gives me an "Ugh" every time I point them out.

**Wondering about the Fairy Shrimp?** Me too. They either did not hatch or were eaten by the young Triops in the first days.



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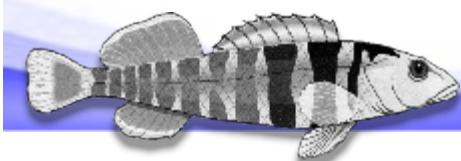
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# The DARTER

## My First Time Spawn for MASI

### *Pseudomugil mellis*

By Gary Lange



Adult male *Pseudomugil mellis*

OVER THE YEARS I have bred a lot of different types of *Pseudomugil*. I started over thirty five years ago spawning *Pseudomugil gertrudae* obtained from the remarkable hatchery, Wet Thumb Aquatics, run by the late Delores and Dewey Schehr.

*Pseudomugil* hail from the Australian continent, the island of New Guinea plus a few smaller islands in-between these two land masses. Out of the eight *Pseudomugil* I have bred (only 7 submitted for BAP, my bad), all have been relatively easy. However my "great white whale" *Pseudomugil* was a tiny maximum length, 1.4" (3.5 cm) fish, *Ps. mellis*.

It's a great looking fish with a beautiful bronze body and fins black lined tipped in white at the edges. Many people when they see a photo of this fish they know they want it. In the hobby though, this fish is still quite scarce and often quite pricey. So much so that a similar looking fish, the small *Pseudomugil signifer* (there are two types, the larger will eventually be renamed) has been foisted more than a few times on us at the retail level. Back in the late eighties the *Pseudomugil signifer* that Beldt's Aquarium got in as *mellis* caused some quite heated debates. Although they "kind of" look alike, when you see a photo of the real *mellis* it is obvious which is which.

The reason it's scarce is because it doesn't breed nearly as easily as its other cousins. This tiny fish is also

highly territorial, so much so that I think the males would rather argue amongst themselves rather than breed with the willing females. Most *Pseudomugils*, including *mellis*, don't have a really lengthy life span and their useful breeding lifespan is only a few years. So when you get them you need to breed them right away.

I have tried breeding these fish at least four times over the last thirty years. The best I could do was to produce 8 males and one female. Not enough at the time for BAP points and certainly not enough to produce succeeding generations. The last try inside my fish room was in a two foot tank, a lot of space for three pairs of tiny fish. The fish come from very tannin stained streams that are quite acid and very low conductivity. Even

Similar, freshly caught male *Pseudomugil signifer* from Amamoor Creek.



True *Pseudomugil mellis* are only found in a small area near Brisbane, AU.





**Snapper Creek - home to  
*Pseudomugil mellis* and *Melanotaenia  
duboulayi*.**



***Egeria najas***

trying to simulate these conditions resulted in failure.

When the last try pretty much failed I decided that some *mellis* I had from the Kangaroo Creek location would go out in the pond for the 2020 breeding season along with *Rhadinocentrus ornatus* and a big rainbowfish *Chilatherina fasciata*. *Rhadinocentrus* and *mellis* occur naturally together so I figured they should get along in my 4'x7' 400 gallon pond. If the *mellis* didn't breed I was sure then that they would look much nicer when they came inside in September because something about being outside for the summer makes any fish look better.

**I had always teased my Australian friends** as most of their breeding of blue-eyes and rainbowfish occurs outside in their ponds. To me that's kind of cheating instead of working hard by picking eggs or moving mops to a separate hatching tank if you are raising them inside.

In 2011 I had collected at Snapper Creek, which has been another source for *mellis* in the hobby. At the time it was illegal to keep any *mellis* so we enjoyed the *Melanotaenia duboulayi* and *Rhadinocentrus* that we caught there. The water at Snapper Creek was quite dark. This is typical *Pseudomugil mellis* habitat.

***Rhadinocentrus* and *Pseudomugil mellis* are quite cold tolerant** so I put the *Rhadinocentrus* group and five pairs of *Ps. mellis* out in my pond at the end of April. It helps that half of my pond is in ground and benefits from solar heating. I also kept a dome of greenhouse plastic sheeting over the

top for almost a month because of our fluctuating spring temperatures. I'm sure they could have taken our weather without the plastic cover but I wanted them breeding as soon as possible.

**The pond had previously been seeded with Daphnia**, a plentiful food source for the first month. After that I fed freeze dried mysis shrimp and FD artic copepods from Brine Shrimp Direct. Once I started seeing fry I added Krill Pacifica Powder and Arctic copepod powder also from BSD. There are always plenty of tiny critters in ponds for fry to eat but adding extra will help avoid predation among the different aged fry.

**I always add *Egeria najas* to the pond** which helps as a sanctuary for the fry besides the lilies that over winter there. This plant really thrives in the pond and doubles in diameter as compared to the tank raised plant. Those tiny leaves are an ideal spot for fry to flourish without the fear of being eaten by adults or larger hungry juveniles. In the photo, the tank raised material is in the upper right hand corner.

**By mid-July I could finally identify the fry** and know that I had some young *Pseudomugils* in the pond. After I tore down the pond and separated the *Pseudomugil* from the young *Rhadinocentrus* I realized I had way more than I had hoped- at least thirty fry. Several boxes were sent out to other people that are planning to set them up in ponds next year.

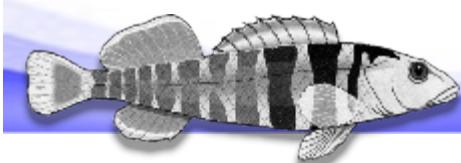
**What better way to keep an endangered CARES fish going** than by getting it commercially produced- so I also sent a group down to Valley Fisheries in Florida. One of the few hatcheries in Florida that have committed to not cross-breeding rainbowfish and have recently also done a great job with other blue-eyes like *Pseudomugil furcata* and *Ps. luminatus*. Hopefully this time we'll be able to keep them going.

They were locally offered as a BAP submission at a recent Parking Lot Swap.

**I will enjoy them inside and will for certain put them back into the pond next year.**

**Photo tank of Kangaroo Creek *Ps. mellis* juveniles and fry retrieved from the outdoor pond .**





## *Pterolebias longipinnis*

### A Beautiful Annual Killifish from Brazil and Paraguay.

By Jack Heller



*Pterolebias longipinnis*

ONE OF THE South American killifish that I am currently working with is *Pterolebias longipinnis*, a beautiful annual killifish from Brazil and Paraguay.

This fish has long, flowing fins and a red tint to its body and fins and is one of the larger annual killifish, growing up to four inches if given enough nourishing food and plenty of tank space. Most experienced annual

killifish breeders raise a group of these fish in a 35 to 55-gallon tank and then select one pair to place in a ten-gallon tank for spawning.

I have been successful spawning *Pt. longipinnis* in a ten-gallon tank at 73 degrees and water testing 180 ppm total dissolved solids. I add oak leaves and alder cones to further soften and acidify the water, I try to wait a week after setting up the tank before introducing the breeders.

*Pt. longipinnis*, like other South American annual killifish, rarely live, under the best of conditions for more

than a year, so I set them up for breeding as quickly as possible when they appear mature.

***Pterolebias* as well as many other species of soil spawning annual killifish readily spawn in containers of artificial soil set within the tank.**

Since this species is among the larger annual killifish, I use breeding containers made out of five and a half inch tall, thirty-two-ounce deli containers with a hole cut in the lid large enough for the fish to easily swim through without scattering the medium all over the tank. The medium I use is

#### Substrate Spawning Killifish Basics

Annual Substrate spawning killifishes are found in both Africa and South America, and represent a group of fish with a very unique survival adaptation which allows them to live in isolated bodies of water that evaporate during the dry season.

*Pterolebias* as well as *Nothobranchius*, *Austrolebias*, *Simpsonichthys* and *Cyanolebias* are some of the species of annual soil spawning killifish found in temporary pools during the rainy season.

The fish in these isolated pools of water die when these bodies of water dry up after the rainy season, but the fish have already deposited their fertilized eggs in the substrate of the pool, often burying them. When the next rainy season arrives and the pool once more receives water, the eggs hatch, the fry grow rapidly, and they then, in turn, spawn and deposit their eggs in the substrate of the pool and the life cycle repeats itself.

Many years ago, talented aquarists developed a system for simulating the life cycle of these annual fishes in an aquarium. This involves filling a container with a substrate, in most cases, boiled peat moss, placing the container in the aquarium housing the annual killifish, then hoping they swim into the container and deposit their fertilized eggs in the substrate.

If the fish behave as expected, the container is removed after approximately two weeks of spawning and the substrate is dried. If eggs are found in the substrate it is stored in a poly bag or a Ziploc bag at an appropriate temperature for an incubation period unique to the particular species.

After storage the medium is then submersed in water having the same parameters as the water in the aquarium where the fish spawned. If the eggs have been incubated for the appropriate period of time at the proper temperature, the fish will hatch within hours, or, at most, a few days, and you will be rewarded with a healthy community of fast growing and interesting killifish.



coir or coconut fiber. **See the following article on preparing spawning media.**

**With both the large containers and the small ones, I harvest the coir every two weeks.** I squeeze as much of the water out the coir as possible by pouring it into a canning bag and squeezing it over a larger container. I have used a canning bag for many years to squeeze water out of the spawning medium because canning bags are constructed for durability and hold up far better than fish nets during this procedure.

After I squeeze the water out of the coir, I lay it on a chamois or pigskin and rub it thoroughly to further dry the coir and to see if there are eggs. If I find eggs, I then move the coir to a one-quart Ziploc freezer bag and label it with the name of the fish and the date of harvest. I prefer freezer bags for storage because they seem to do a better job of retaining moisture during the storage period.

**Two cups of this medium**, which is the standard yield when these deli containers are half filled with coir, is a substantial amount of medium to rub in a chamois, so I split the yield in half and only rub half of the coir at a time. I don't do any further drying of the eggs of this species, but place them directly into the Ziploc bags for incubation. This practice has worked well with rainforest fish, but with annual killifish from the more arid regions of South America, I lay the medium on newspaper for further drying.

**The bag label includes the complete name and location** of the species and the date that the peat was harvested. I also note a rough approximation of the number of eggs observed. I enter this information on the label and enter it in my notebook with a sequenced control number.

I look back in the notebook to see how long I have incubated the species previously, if that information is available, and the number and quality of fish hatched. If this historical information indicates a substantial and healthy hatch. The historical incubation period is used to compute a suggested hatch date for the new bag of eggs and enter this information. I enter the control number and suggested hatch date on the label and mark the calendar in my fish room with the

control number and the suggested hatch date. Then store the bags.

**Through trial and error**, I have found that the optimal temperature for these eggs seems to be seventy-eight degrees F. At this temperature, the *Pt. longipinnis* are usually ready to wet in four months. I check the eggs around the estimated hatch date, and if the eggs are eyed up and the embryos appear ready, I wet them.



#### **Where I have no history with a species, I consult Dr. Roger**

Brousseau's book, *A Hobbyists Guide to South American Annual Killifish*, 1994, now out of print, which has hatching guidelines for several species. I also check Frans Vermeulen's book, *The Killies of the Lost World* and Frans' web site, [www.itrainsfishes.net](http://www.itrainsfishes.net), and other sources available on the web. These generally provide me with images of adult fish as well as approximate incubation periods so that I know when to start checking the eggs.

**Once I can see a developed eye** in the eggs and determine that a coir is ready to wet, I use a plastic shoe box, pour the coir in the box, stick the plastic bag that held the peat under the shoe box so I remember which bag is being wetted, and pour in water having the same parameters as the breeding tank from which the coir was collected. Then I wait. If I have followed the above steps, I can usually expect the first hatchlings to show up from a few hours to two days. In the case *Pt. longipinnis* fry, they are large enough to take baby brine shrimp immediately.

I set the fry up in a container with hornwort or java moss from an active tank and some small rams horn snails and feed the fry in the morning with microworms and in the evening with baby brine shrimp. I also add some daphnia to the container after the first week to filter the water and provide a

constant source of food. I also do a partial water change every two days for the first two to three weeks.

**Once the fry appear large enough**, generally in around three weeks, I move them to ten-gallon tanks that have had the water level drawn down to half. I add a few teaspoons of non-iodized salt and a pinch of Flubendozol and plenty of hornwort, java moss and rams horn snails, and introduce grindel worms along with baby brine shrimp.

**These fish grow rapidly and start to sex out in four to six weeks.** Since they grow at different rates, and the males can be extremely aggressive, I try to separate them by size and sex as soon as possible. Once again, it should be emphasized that these fish should be set up to breed as soon as they appear to be large enough. It is important to match males and females by size as closely as possible, and to pick the healthiest, full bodied fish for breeding.



***Gnatholebius hoignei*, a similar species is featured on the 2021 AKA Convention logo**

**The eggs of the *Pt. longipinnis* require a great deal of patience** during the long incubation period and the fish require a high degree of commitment during the raising and breeding process, but these efforts are very rewarding when these beautiful and vibrant species attain maturity and start spawning the next generation.

**South American annual killifish all require additional effort in order to breed them successfully, but the beauty and of these fish and their unique behavior in the aquarium more than compensate for the extra work involved in their propagation.**



# Artificial soil media for Substrate Spawning Killifish

By Jack Heller

**T**HE MEDIUM I like to use is not peat moss, the more traditional medium used with these fish, but rather boiled coir or coconut fiber. The brand I use is found in the herpetology section of the large pet stores and goes by the name "Eco-Earth".



**Boil this medium in a ceramic coated kettle** for about ten minutes, let it cool, and then swirl it in a bucket of water before spooning it into a net. Run the net under water to wash out the smaller particles, and then place it in another bucket with enough water to cover the medium. Swirling the medium in a bucket before spooning it out causes the sand that is mixed in with the coir to separate and sink to the bottom of the bucket. The medium that ends up in the second bucket is



therefore much cleaner and easier to use.

**Keeping the coir soaking in water before use** assures that when it is netted out and placed in the deli container, the container will sink in the tank and sit up straight rather than floating to the top of the tank or falling over due to air pockets in the medium.

Once this medium is prepared, I fill the deli container half full with medium, finish filling it with water from the tank, snap the lid on, and hold a small lid from a margin tub over the hole in the lid so medium wont flow out of the hole into the tank when I submerge the container.

Remove the small margin tub lid very slowly and carefully from over the hole in the lid of the deli container and very little medium will flow out into the tank. Give the medium a minute to settle, partially lift the lid off the deli container gently and let the last of the air bubbles float out of the container before snapping the lid back in place.

**When the spawning container has been in the tank for a day or so**, one can tell if the fish have found their way into it, even if not seeing the fish in the container. The coir will no longer have a smooth level surface, but will obviously have been disturbed. It is rare that a male and female fish fail to find their way into the container, even if it initially takes a few days.

**Coir has two advantages over peat moss.** It is denser than peat and the spawning container does not need to be weighted down with marbles or rocks in order to prevent it from floating. The container, when half filled with coir, will stand in the aquarium on its own.

The second advantage of coir occurs when the coir is rubbed in a chamois or pigskin to further dry it and to see if eggs are present. Since coir is a courser medium than peat moss, it

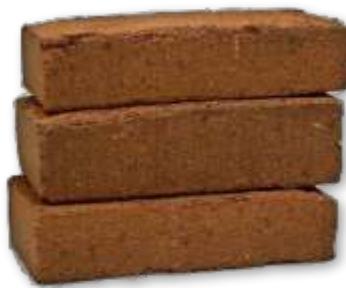


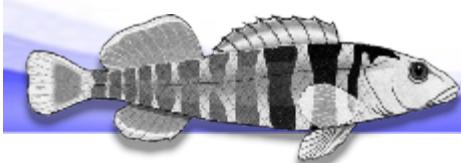
**Cyanolebias inspecting a jar of peat.**

does not cling to the eggs as readily as peat and it is far easier to find the eggs.

**Coir has worked so well for me that it is currently the only medium that I use** for spawning annual killifish. For the smaller species, I use a small spherical glass container that I get at the craft store for a few dollars. These little containers have a capacity of sixteen fluid ounces, and I place one cup of coir in them.

**These containers do a relatively good job of containing the medium so that not too much of it ends up on the bottom of the tank.**





## Minifins

# Larval Fish Development

By Mike Hellweg, CFN  
(Certifiable Fish Nut)

**N**EARLY EVERY ISSUE I talk about breeding and raising fish, often assuming folks know what I'm talking about when I use terms like wrigglers, embryos, fry, larvae, juveniles, etc. I realize that might be a bit confusing to someone new to the hobby of breeding fish, and maybe I should take some time to define the terms and explain what they mean and even a bit about how fish grow. Some people use these terms almost interchangeably, but each has a specific meaning- and not really interchangeable.

**Some of this may seem a bit basic or obvious, but let's start with the beginning.** With but just a couple of known exceptions such as *Kryptolebias marmoratus* (the only known self-fertile hermaphroditic vertebrate), fish begin life as the separate gametes coming from each of their parents.

Spermatozoa or milt is contributed by the male, and eggs are contributed by the female. The way these products are combined internally or externally varies from species to species and is influenced by local water



parameters, availability of food to the parents, temperature, daylight or moonlight, predators and countless other external influences.

Through the eons of evolution in their specific habitats these influences have led to a particular species' successful responses to these challenges. That means each species has evolved a preferred method of reproduction.

Ontogeny, or the development of the fish from fertilization to adult, varies from species to species and can be so radically different even in a single genus of fishes that one might wonder how they could possibly be related! Some species provide brood care; some carry the developing embryos internally (males or females!), while others just scatter their reproductive products in a wild chase and leave them to chance. There are even species like salmon and in a different but similar way the annual killies of South America and Africa that spawn and die, with their young hatching and growing up in subsequent seasons.

## Embryos

Once the eggs are fertilized, embryos begin to develop during the period known as incubation. Incubation can last just a few hours as in the Dwarf Gourami, a few days as in most tetras, barbs, danios, minnows, cichlids, catfish, etc., or can last for two

weeks or even more as in rainbowfish, killies and others.

In fact, some killies actually enter into a period called diapause where development stops sometimes for weeks or even months as the habitat dries out. They will remain in the state



Developing embryo in the egg

of diapause until conditions are just right for hatching. Once they do hatch, these larvae are ready to feed and care for themselves, and they need to be fed immediately.

Some fish eggs such as those of killies are large and clear. With a handheld magnifying glass, you can actually watch the embryo develop, see its heart beating, watch it move around in the egg, and eventually see it reacting to you.



## Prelarvae

Some fish species will hatch early into what is known as a prelarva while other species will go through the prelarval stage while still in the egg. Some writers aptly describe these prelarvae as "slivers of glass". They still have their yolk sac attached and usually have an adhesive organ or cement gland on their heads or stomachs that allows them to adhere to solid objects such as the roof of a cave, the glass of the tank, plant leaves or other similar objects.



**Ancistrus prelarva.**

The yolk sac provides them the nourishment they need for the first several days of life as they complete their development. Their fins are often simple buds, and will take a few days to finish development. They also need to develop their digestive system, as the yolk continues to nourish the body directly. While they do have what appear to be eyes, these are often not completely developed.

Sometimes all they can see for the first week is light and dark or the specific movement of specific food items, and without this specific food item they will starve to death. Once they complete the development of their eyes, they can expand their diet and hunt.

While it seems like a lot to do, this early development is quick, often only taking 3 or 4 days after hatching. Once all of these things are complete, you will see these prelarvae make their first clumsy attempts at swimming. This is known as emergence. It usually takes them a day to get this down. Once they are free swimming, the yolk sac is absorbed and they need to be fed.

## Wrigglers

With cichlids, we call the young at the prelarva stage wrigglers. They are completely dependent on the parents for protection. Parents often dig several pits in the substrate and gently

move the wrigglers several times as they finish their development. If the parents are lost, some wrigglers may survive, but most will perish.



**Angelfish Wrigglers**

larvae, or what we hobbyists usually refer to as fry. This is the stage at which most young livebearers are born.

The fry usually have cryptic coloration that helps them to blend into their surroundings. It can be amazing to see that they blend in so well with their environment that the untrained eye might not see anything at all in the tank only to walk away and turn back to see a cloud of fry rise from the substrate!

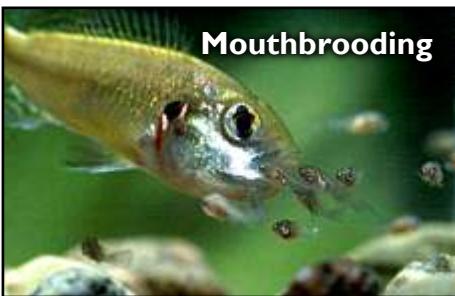


**Guppy Fry**

## Mouthbrooding

Some cichlids, some catfish, the marine cardinalfish, and many Anabantoids, will take either the eggs as soon as they are laid, or the prelarvae after they have hatched into their mouths, where they will be protected in a special area of the throat called the buccal pouch. Usually the parent won't eat while brooding, but there are some exceptions.

Sometimes it is the male that performs this duty, sometimes the female, and with yet other species, both parents will share this duty. The mouthbrooding instinct is so strong that some species will even take on the eggs of unrelated species!



**Mouthbrooding**

In some cases the fry have no coloration at all! You can see the eyes and the stomach, but the rest of the body is clear. These larval color patterns help camouflage the fry so they are not obvious to predators and they can spend their first days eating and growing.

Fry are able to swim, hunt, and eat, and eat, and eat. They need to feed almost continuously. Some species will take commercial larval diets while others need specialized foods like infusoria, rotifers, or newly hatched brine shrimp.

As mentioned, some species will have a feeding response triggered by certain types of movement (such as the wriggling of a rotifer, or the jerky-darting motion of a copepod nauplius). These species can starve in a tank full of the wrong kind of food. It is important to research the species with which you are working to be able to provide the right food for these first critical days.

## Importance of Live Food

Some species of larval fish simply must have microscopic live foods, while others can go through larval development on a diet of just commercial powdered or liquid diets. We still don't completely understand why this is, but researchers are

## Larvae (or Fry)

When the prelarvae have grown enough to reach emergence (when they become free swimming) they are called



discovering new information on a regular basis.

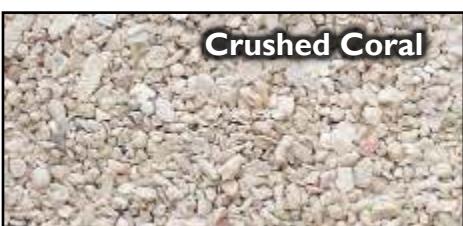
One thing that some nutrition researchers have discovered is that some larval fish need live foods to provide them with certain enzymes and bacterial gut fauna that they will need to help them digest different foods as they grow. Without these, they cannot digest food and slowly wither and die off, even though they are eating heartily. This usually happens at about two weeks of age.



If you are having fry of a particular species seem to be healthy and suddenly all dying at about this age, it is possibly due to their not having the proper live food in their diet.

## Importance of Calcium

Another critical thing at this point is that the developing larvae are able to obtain enough calcium from the water for developing fins, bones, and scales. Some of limited amounts of calcium is absorbed from the food they eat, but much of it is extracted directly from the water in a process called ossification.



Larval fishes have specialized pores in their skin that help them to extract this vital mineral directly from the water. To keep calcium levels high in the grow out tank, it is important to do regular water changes to renew calcium and other minerals in the water.

Many breeders also add crushed coral, oyster shell, aragonite sand, or similar things to the fry tank to provide the needed minerals. It may be surprising, but this is important even to fish from blackwater habitats.

## Bulging Bellies

A key thing to look for at this point in their lives is that the bellies of all of the young fish are bulging after feeding. If they are not, then it is likely that you are either not feeding enough, or you are feeding the wrong food. Experimentation will let you know when you get it right.



It can be almost comical to watch a tank full of fry for the first week or so after emergence. It literally looks like a tank full of eyes and bellies!

## Juveniles

Finally, the larval fish will begin to take on color patterns that indicate they are now juveniles, or non-reproductive fish (also called fingerlings in larger fish). Sometimes the coloration is the same as adults, but in most species it is different, sometimes so different that juvenile fish and adult fish collected at the same time in the same location have been described as different species! This immature coloration will remain as they continue to grow until they reach adult size and sexual maturity. This varies from species to species, and can be as quick as 8 - 10 weeks after hatching, or as long as several years after hatching.

A few fish, such as some of the miniature Cyprinids like Celestial Pearl Danios, are precocious spawners and

will be able to spawn successfully when they still have immature color patterns and have not reached anywhere near adult size.

## Putting on growth

To get the quickest growth, feed several times a day and perform regular, large water changes on the fry grow out tanks. To get good fin growth, it is helpful to regularly feed foods with high keratin content like krill, shrimp, and similar foods. This is especially important when feeding juveniles of long finned varieties.

All of this food means a lot of waste products in the water, and waste products building up on the bottom of the tank. I recommend vacuuming the bottom of the grow out tank with a piece of airline tubing attached to a length of rigid airline tubing so you can avoid sucking up any fry. If you can, daily water changes are best for the first week to 10 days, then as you move the fry to larger quarters, cut it down to two or three water changes a week.

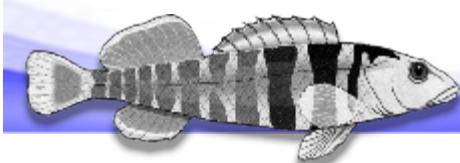
I always add a few snails to the grow out tank along with a handful of Java moss. The Java moss helps to filter the water a bit, but mainly it is covered by microscopic life which the fry will nibble on throughout the day between meals.



Once the juveniles have reached an inch or so in size, depending on species, they are ready to be moved to new homes. At this point you can share with fellow club members, friends, family and maybe even trade with local shops or sell them to other hobbyists.

**...and that's also time to find another breeding project!**





## Follow-up: Bloodworms and Potential Allergic Reactions in Your Dog or Cat

By Thomas M. Keevin

**A**FTER I HAD finished writing the article on bloodworms and your health, published in the July, 2020 Darter, I went back online to read more hobbyist discussions concerning bloodworm allergies in a number of additional aquarium fish discussion groups.

**I wasn't thinking about the risk of severe allergic reaction to our pets**, but it should be no surprise that I found a post indicating that our furry friends can also have allergic reactions to bloodworms that can be severe.

Remember the description of the allergic reaction of a girl that had accidentally eaten blood worms? :

"..... Dr. J. Roberts presented the case of a girl who had developed anaphylaxis after accidental ingestion of residual fish food that was on her hands when she was eating dinner."

**I found a similar post** by a hobbyist whose dog had a similar reaction from "intentionally" ingesting bloodworms - or at least licking the package:

"I would like to add here this warning pertains to dogs, cats and most other mammals. My pug puppy El Guapo was nearly killed by a severe reaction to chironomid larvae last Saturday after stealing an empty package from the trash. I don't know which is worse- seeing my little buddy struggling to breathe or the 600 USD I shelled out for a night at the doggy emergency hospital ICU. It took four days of drug therapy and many belly rubs to pull the little dude through. I had to do fecal exams on his poo to prove this was the issue. Nothing like playing with dog poop to set you straight. I now incinerate all bloodworm related packaging with a torch."

**Our pets could potentially be susceptible to allergic reactions from all the same avenues** of exposures that cause human reactions: aerial exposure to allergens; ie: dust from freeze dried bloodworms or bloodworm hemoglobin in the air, contact exposure, or ingestion. Remember the reactions of the woman that could not touch the aquarium water if the fish in the tank had been fed bloodworms or even be near her husband if he had not washed up after feeding bloodworms?

**Both of these types of exposures, and accompanying allergic reactions in humans, were commonly discussed in hobbyist discussion groups.** I could envision my cat stepping in a puddle of bloodworm contaminated aquarium water. The first thing he would do is drop, rollover, and lick his paws. Or how about your dog lapping up bloodworm tainted aquarium water or the cube of frozen bloodworms or a splat of bloodworms on the fish room floor that you accidentally dropped? Any self-respecting dog or cat would love to get a hold of a stinky bloodworm package and lick the heck out of it! Bottom line, you certainly don't want to feed your beloved catfish or dogfish bloodworms.

**I looked for additional posts concerning bloodworm allergic reactions in dogs and cats** on hobbyist discussion groups and searched the veterinary literature, but could find no additional information. This doesn't



**Zoey Keevin contemplating eating bloodworms. "Hum, they smell bad- that's good, I think I'll have a little taste."**

surprise me because our pets can't tell us what they have surreptitiously gotten into behind our backs. My cat wouldn't tell me even if he could!

**It often took a number of reactions in people before they even connected feeding their fish bloodworms and severe allergic reactions.** El Guapo's veterinarian would probably be scratching their head wondering what was causing the breathing problems. El Guapo's "secret" would have gone to the grave. His life was undoubtedly saved because he was caught in the act of trash can diving by a knowledgeable hobbyist.

**In the general population, the odds of a pet coming in contact with bloodworms are minuscule**, but in our case, we are a subset of the population that might actually feed their fish bloodworms and the odds of contact become much greater.

**I'm not trying to be an alarmist. I just want you to be aware of a potential danger of exposing your pet to bloodworms and to be careful.**

**After all, your pet is part of the family!**



# 2020 BREEDER'S AWARD PROGRAM - Steve Edie



## September 2020 - Parking Lot Swap

Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
<b>Chuck Bremer</b>	<i>Ameca</i>	<i>splendens</i> #@		0		<b>10</b>	<b>1447</b>
	<i>Danio</i>	<i>margaritatus</i>	Celestial Pearl Danio	10			<b>1457</b>
	<i>Phallichthys</i>	<i>quadripunctatus</i> #@	Four Spot Merry Widow	0		<b>5</b>	<b>1462</b>
	<i>Pteronotropis</i>	<i>hypselopterus</i> *	Sailfin Shiner	10	<b>10</b>		<b>1482</b>
	<i>Skiffia</i>	<i>francesae</i> "Sayula" @	Sayula Skiffia	15		<b>15</b>	<b>1512</b>
	<i>Xenotoca</i>	<i>doadrioi</i> #@	Red Tailed Goodeid	0		<b>10</b>	<b>1522</b>
	<i>Xenotoca</i>	<i>lyonsi</i> "Rio Tamazula" #@	Red Tailed Goodeid	0		<b>10</b>	<b>1532</b>
	<i>Xiphophorus</i>	<i>kallmani</i> #@	Kallman's Swordtail	0		<b>10</b>	<b>1542</b>
<b>Steve Coxon</b>	<i>Aristogramma</i>	sp. "D37" *	<i>Aristogramma</i> sp. "San Jose"	15	<b>5</b>		<b>70</b>
	<i>Fundulopanchax</i>	<i>gardneri</i> "Inidere"	Gardneri Killi	15			<b>85</b>
<b>Charles Harrison</b>	<i>Corydoras</i>	<i>adolfoi</i>		10			<b>2955</b>
	<i>Limia</i>	<i>perugiae</i> "Boca de Cachon, DR" *		5	<b>5</b>		<b>2965</b>
<b>Mike Hellweg</b>	<i>Gambusia</i>	<i>clarkhubbsi</i> "San Felipe Creek" * @	San Felipe Mosquitofish	5	<b>5</b>	<b>5</b>	<b>7440</b>
	<i>Gambusia</i>	<i>krumholzi</i> "Rio Nava" * @	Spotfin Mosquitofish	5	<b>5</b>	<b>5</b>	<b>7455</b>
	<i>Gambusia</i>	<i>senilis</i> "Cypress Creek" * @	Blotched Mosquitofish	5	<b>5</b>	<b>5</b>	<b>7470</b>
	<i>Poecilia</i>	<i>gilli</i> "Rio Aquan" *	Spotfin Molly	5	<b>5</b>		<b>7480</b>
	<i>Pundamilia</i>	<i>macrocephala</i> * @	Deep Water Hap	10	<b>5</b>	<b>10</b>	<b>7505</b>

### Scott Bush Challenge : *Posted on FaceBook - October 16 at 6:11 PM*

**So, I've been a member of MASI for about 30 years**, those that know my fish keeping habits know that I was into keeping large species, most originating from SA, along with a few years of salt and fancy goldfish. Sometimes I had fry, never tried and saved any, they were on their own, and never turned in any for BAP. I was not a breeder!! So, over the last couple years my fishkeeping changed directions once again, and thanks to Danielle, I(we) now have 20 tanks of Africans cichlids!! And thus, I've became a fish breeder!!

**There are currently 15 different types of cichlids growing that were born in our tanks!** Along with a bunch of guppies and a few Florida Flags that were born on the back porch this summer!

**Look out Mike Helleweg and Ted Judy.....I'm coming for you!!**

#### 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



# BAP - September 2020 - CONTINUED

Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
<b>Mike Huber</b>	<i>Alcolapia</i>	<i>ndalalani</i> @		15		15	3042
	<i>Aristochromis</i>	<i>christyi</i>		15			3057
	<i>Aulonocara</i>	<i>sp. "Caroline"</i>	Caroline Swallowtail	10			3067
	<i>Aulonocara</i>	<i>nyassae</i> @	Blue Peacock	10		10	3087
	<i>Characodon</i>	<i>lateralis "Guadalupe Aguilera"</i> @		10		10	3107
	<i>Haplochromis</i>	<i>paropius</i> @		10		10	3127
	<i>Pseudotropheus</i>	<i>sp. "Polit - Lion's Cove"</i> *		10	5		3142
	<i>Pundamilia</i>	<i>macrocephala "Python Island"</i> * @		10	5	10	3167
	<i>Pyxichromis</i>	<i>orthostoma</i> @		10		10	3187
	<i>Sciaenochromis</i>	<i>fryeri</i>		10			3197
<b>Randy Ison</b>	<i>Ancistrus</i>	<i>sp. "Super Red"</i>		10			265
	<i>Danio</i>	<i>margaritatus</i>		10			275
	<i>Corydoras</i>	<i>aeneus</i>	Albino Cory	10			285
	<i>Fundulopanchax</i>	<i>gardneri "Inidere"</i>		15			300
	<i>Oliotius</i>	<i>oligolepis</i>	Checkerboard Barb	10			310
	<i>Poecilia</i>	<i>sp. Domestic Molly"</i>	Black Molly	5			315
<b>Ed Millinger</b>	<i>Scleromystax</i>	<i>kronei</i>		15			1096
<b>Holly Paoni &amp; Kevin Wise</b>	<i>Amatitlania</i>	<i>nigrofasciata</i>	Convict Cichlid	5			1102
	<i>Ameca</i>	<i>splendens</i> # @		0		10	1112
	<i>Cryptocentrus</i>	<i>chetumalensis</i>		10			1122
	<i>Pseudocrenilabrus</i>	<i>multicolor victoriae</i>	Egyptian Mouthbrooder	10			1132
<b>Caleb Pitman</b>	<i>Barbodes</i>	<i>semifasciatus</i>	Gold barb	10			342
	<i>Glossolepis</i>	<i>multisquamata</i> @	Sepik Rainbowfish	10		10	362
	<i>Skiffia</i>	<i>francesae "Rio Teuchitlan"</i> @	Golden Skiffia	15		15	392
<b>Danielle Repp</b>	<i>Metriaclima</i>	<i>estherae</i>	Red Zebra	10			10
	<i>Neolamprologus</i>	<i>pulcher</i>	Daffodil	10			20
	<i>Protomelas</i>	<i>taeniolatus</i>	Red Empress	10			30
<b>David Schmidt</b>	<i>Xiphophorus</i>	sp. "Domestic Swordtail"	Red Velvet Swordtail	5			5
<b>John Van Asch</b>	<i>Carassius</i>	<i>auratus</i>	Fantail Goldfish	15			335

**BAP Key: See Previous Page**



# HORTICULTURE AWARD PROGRAM - Mike Hellweg

## September & October 2020

### Points Rewarded!



Member	Genus & Species	Common Name	Type	Points
Danielle Repp	5 points			
	<i>Pistia stratiotes</i>	Water Lettuce	OB	5
David Schmidt	35 points			
	<i>Limnobium laevigatum</i>	Brazilian Frogbit	V	5
	<i>Riccia fluitans</i>	Crystalwort	V	10
	<i>Taxiphyllum barbieri</i>	Java Moss	V	5
Gary Lange	1925 points			
	<i>Potamogeton lucens</i>		V	10
	<i>Potamogeton lucens</i>		IB	15
Holly Paoni &	1905 points			
Kevin Wise	<i>Cryptocoryne moehlmanni</i>	Moehlmann's Crypt	V	15
	<i>Iris fulva</i>	Copper Water Irsi	V	10
	<i>Ruellia brittoniana</i> Chi Chi	Pink Bells	V	15
	<i>Typha latifolia varigata</i>	Variegated Dwarf Cattail	V	5
Laura Morrison	45 points			
	<i>Pistia stratiotes</i>	Water Lettuce	V	5
	<i>Salvinia minima</i>	Dwarf Salvinia	V	5
Megan Moncure	15 points			
	<i>Lomariopsis lineata</i>	Susswassertang	V	5
	<i>Microsorum sp. Trident</i>	Trident Leaf Java fern	V	10
Mike Hellweg	3780 points			
	<i>Eleocharis erythropoda</i>	Red Foot Spike Rush	OB	10*
Ryan Bush	220 points			
	<i>Alternanthera reineckii</i>	Red Hedge	V	15
	<i>Anubias barteri</i> Golden Nana	Golden Dwarf Anubias	IB	20
	<i>Blyxa japonica</i>		V	15
	<i>Pogostemon erectus</i>		V	15
	<i>Vesicularia montagnei</i>	Christmas Moss	V	10
Steve Coxon	65 points			
	<i>Microsorum pteropus</i>	Java Fern	V	10
	<i>Microsorum sp. Trident</i>	Trident Leaf Java fern	V	10

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



# Documentation of Blooms and Temp Vegetative HAP rules!



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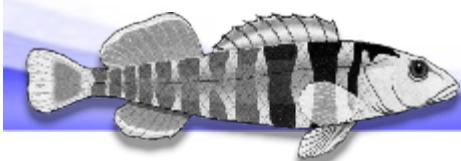
St. Louis, MO 63119  
Mon.-Sat. 9:30-9:00

Sunday 11:00-6:00



\* Excludes Sale items.





## **Potamogeton lucens**

### **Vegetative and inflorescence HAP Report**

**By Gary Lange**

I OBTAINED THIS PLANT from Vin Kuttu, who is a famous pike cichlid keeper. I don't think he wants the cichlid people to know that he is also an accomplished aquatic plant expert but now I've let the cat out of the bag! He said it was quite easy.

Like many Potamogetons before that I have raised it this proved to be true. It grows just fine though in my 125 ppm GH and 2 degrees KH neutral water.

I really do like the veining pattern and ruffled look of it's leaves. Like all of the "pond weeds" this grew quite nicely in bright lights with CO2 and also decent in a non-CO2 aquarium. In the CO2 tank it also sent up a spiky inflorescence.

I dutifully dusted it up and down hoping that it was self-fertile. I cut a hole in a thin piece of Styrofoam and



pushed the spike through it. In this manner I hoped to obtain some seeds and not lose them if they fell into the water.

All of my aquariums are tightly covered so it stays fairly humid which is usually what is helpful in producing seeds. After 19 days I didn't see any seeds that had fallen from the spike.

**With macro photography I'm also not sure whether there are any seeds there.**

Nonetheless I snipped the spike and placed it in a sand bed in a covered container to see if I could sprout anything. Maybe I'll find out next month if anything grows.

**Meanwhile I'll wait for another spike and hope to get lucky with some seeds.**



# 2020

## MASI Events in 2020

**CLUB HOPPING**  
Steve Edie

Nov 19 - MASI General Meeting Webinar

Nov 23 MASI Executive Council ZOOM

Dec 17 - MASI General Meeting Webinar

# 2021

Jan 21 - MASI General Meeting Webinar

Feb 18 - MASI General Meeting/Webinar

Feb 28 - MASI Winter Auction, St Louis, MO

Mar 18 - MASI General Meeting/Webinar

Mar 19-21 - NEC Convention, Wallingford, CT

Apr 15 - MASI General Meeting/Webinar

Apr 16-18 - ALA Convention, Detroit, MI

May 1 - MASI Spring Swap, St Louis, MO

May 1 - MASI 2020 Awards, St Louis, MO

May 2 - MASI Spring Auction, St Louis, MO

May 20 - MASI General Meeting

June 10-13 - AKA National Conv, St Louis, MO

Jun 17 - MASI General Meeting

Jul 15 - MASI General Meeting

July 17 - CAFÉ Summer Auction, Champaign, IL

July 22-25 - ACA Convention, St Louis, MO

Aug 8 - MASI Summer Auction, St Louis, MO

Aug 19 - MASI General Meeting

Sep 16 - MASI General Meeting

Sept 19 - MASI Fall Swap, St Louis, MO

Oct 21 - MASI General Meeting

Nov 7 - MASI Fall Auction, St Louis, MO

Nov 18 - MASI General Meeting

Dec 16 - MASI General Meeting



**PLEASE CONFIRM**

Nearby  
Clubs linked  
to their logo



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

Convention  
LogosHotlinked!

As things firm for 2021 this Calendar will again  
expand to Regional/National.

Check events On-Line before driving long distances.  
LOGOs click through to the entity represented.



# AKA 2021 National Convention

## June 10-13 - St Louis, MO

**American Killifish Association Convention 2020** - June 10 through June 13, 2021 at the Holiday Inn St. Louis, Airport West. This AKA Convention is being co-sponsored by the St. Louis Area Killifish Association (SLAKA) and the Missouri Aquarium Society (MASI).

### Friday Show Set-Up

### Saturday Speakers:

**Christophe Aubin** - Bordeaux, France - traveled, photographed and collected killifish and other fish in Cameroon and Congo. He has spoken to aquarium clubs throughout Europe about his collecting experiences and the fish hobby. See some of his photos at <https://www.stofmania.com/>

**Donald Taphorn, PhD** - lived nearly 30 years in Venezuela, where he collected and studied annual killifish. Dr. Taphorn will present the annual killifish of Venezuela, including his collecting work with the late Professor Jamie Thomerson in the Orinoco. His time in Venezuela was spent at UNELLEZ (the University of the Western Llanos), where he founded a Natural History Museum and Fish Collection- one of the finest in South America, fully computerized with almost 50,000 catalogued lots.

**Richard Pierce, PhD** - Massachusetts - a marine biologist who has studied and collected killifish for many years. Rich will be presenting a program on the Lampeye group with some great information on this unique and beautiful group of killifish.

**Dave Hemmerlein** - SW Michigan - long time member of the AKA and NANFA, and an experienced collector of native North American fishes including native killifish. Dave will present on collecting native fishes in the southeastern United States.

**Glen Collier, PhD** - Tulsa, OK - A charter member of the AKA while in high school. Subsequently, he earned his Ph.D. at Cornell. He then served as a faculty member of the Department of Biological Sciences at Illinois State University when he chaired the Department of Biological Science at the University of Tulsa- now Professor Emeritus. Research includes the development of a comprehensive molecular phylogeny for fishes of the Cyprinodontidae. He has published his work in numerous professional scientific and hobby journals and is a past editor of JAKA and frequent contributor.

### Saturday's Special

**Sale:** Combo Rare Fish & Rented Table Sale. See website for details. Buyer's Access based on Convention registration number. Convention handles transactions and all sales from rented tables go to the sellers.



### Saturday Banquet and Awards Program

**Sunday Auction:** 11 A.M.

**Monday Activities** Planned for those who choose to stay another day .

**Collecting trip to the Missouri Ozarks**, home to a large number of freshwater species including killifish, darters, minnows, dace and catfish.

**Tour of Newly Opened St. Louis Aquarium** - promised to be another great experience.



**Registration for AKA Convention 2020**  
opens January 1, 2020 on line at  
<http://aka.org/>

**Jack Heller & Mike Hellweg - Co-Convention Chairs**

**Emails:** [HellerJackL@aol.com](mailto:HellerJackL@aol.com)  
[&mike@minifins.com](mailto:&mike@minifins.com)



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Room Rate: \$119 plus tax. (Special rate including Breakfast), Free Parking & Airport Shuttles

### **Speaker Lineup:**

**Christophe**



**Donald**



**Richard**



**Dave**



**Glen**



# Enjoy the 2021 American Cichlid Association Convention in St Louis, MO, July 23-25!

Cichlid enthusiasts of all ages and experience will be there for all things Cichlid, fishy talk and fellowship and have access to world class speakers, manufacturer & vendor booths, an ACA hospitality suite and fish being sold throughout the event.

**Everyone is bringing their newest acquisitions, spawned and ready to distribute! Party with your Buddies and go home with new fish!**

This event features a slate of 5 special speakers, an extra special vendor room, a tank rental room and a hopping hospitality room. Attendee room sales, found throughout the venue, will be intense. The ACA will not have a Show but the Convention will finish with a large Cichlid only auction!

**In 2021 make up for staying at home in 2020!**

**<https://convention.cichlid.org/>**

**Use the convention website for Convention & Vendor registration, additional details and offers.**

- **Rusty Wessel** - Rusty speaks about the Central American Fishes he successfully collected in Belize, Costa Rica, Cuba, Guatemala, Honduras, Panama, Mexico and Uruguay.
- **Pam Chin** - Shares stories and videos about Cichlid Safaris to both Lake Malawi and Lake Tanganyika. She is a founding member of "Babes In The Cichlid Hobby" whose goal is to make a difference in cichlid keeping.
- **Steve Edie** - Banquet Keynote Speaker, believes that attending conventions all over the US is one of the best means of finding friends, information, and rare species and plans to make Conventions fun for all with "The Talk".
- **Dave Schumacher** - Speaking nationally about basic cichlid genetics and nomenclature, in 2006 Dave bought a fish store and turned it into the Dave's Rare Aquarium Fish specialty store, currently, selling more than 200 cichlid species.
- **Don Danko** - Don has collected extensively throughout Mexico on more than a dozen visits. An accomplished photographer, he has gathered an extensive collection of award winning cichlid photos.

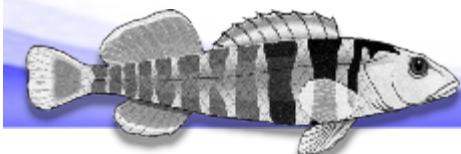


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## MEMBER CLASSIFIEDS

### Wanted:

**Sternco Mini Box Filter** distributed by **Metaframe and Sternco** as part of their basic 5 - 10 gallon starter kits in the late 1960s and early 1970s. It was 4" long and made by Sternco from 1963 - 1968. I'm looking for up to a dozen of them. I'm not looking for museum pieces, I still use them in small tanks.

I'm also looking for one **Scattergood Filtering** hang on tank filter, made in Missouri from the 1940s to the 1960s.

**Contact** Mike Hellweg - [Mike@Minifins.com](mailto:Mike@Minifins.com) Or see me at a meeting or call: (636) 240-2443



### Available to a Good Home:



**Several Rio water pumps and powerheads,** Like new. And other equipment not shown here:

- Rio Aqua Pumps & Powerheads: 2 - Rio 3100's, Rio 180
- Rio Pro Grade HyperFlows: Rio 32HF & Rio 20HF
- Iwaki Walchem - Aquarium Pump WMD 40RLXT
- Londa L86 Automatic Feeder

**Email Renee and make an offer. Trying to make room!!**

**Contact:** Renee - [ren411eal@gmail.com](mailto:ren411eal@gmail.com)

### See a Tank you might like? Many remained after

the **MASI Parking Lot Swaps** and are available for \$0.50 per gallon, some stands also available. We have these and 60 more tanks from another donation to move! All were also available at the Sept. 13th Swap.

**Contact Pat Tosie** for a listing and to make arrangements to purchase.

- Email: [PatTosie@yahoo.com](mailto:PatTosie@yahoo.com)



Member	For Sale	Bid/Asked	Contact
Charles Harrison	Thiosulfate crystals (Chlorine Remover) - pound OTO double strength Chlorine/Chloramine test kits - 4 ounce Flubendazole, 10% powder 25 grams Lavamisole HCl Powder - 5 grams treats 100 gallons Methylene Blue 5% solution (4 ounces) Acriflavine Concentrate (4%) solution, 2 ounces Bromthymol Blue pH test solution, 4 ounces	\$4.00 \$12.50 \$20.00 \$10.00 \$12.75 \$12.70 \$7.00	(314) 849-9761 <a href="mailto:charles@inkmkr.com">charles@inkmkr.com</a>
Mike Hellweg Minifins	General Aquarium Support: Dechlor, Coconut Caves, Flake Foods, Plants & Custom Fish Orders	Contact for Pricing	Email: <a href="mailto:Mike@Minifins.com">Mike@Minifins.com</a>
	Contact by email or buy at the back of the room at MASI General meetings		



## MEMBER CLASSIFIEDS (continued)



**For sale 70 gal tank & wood stand:** tank 48" wide x 18" deep x 21" high (stand is 22" high) \$100.

**Also for sale 58 gal tank** (Functional wooden stand free): tank 36" wide x 18" deep x 21 1/2" high \$75.

**If interested or wanting to make an offer,  
Contact: Kathy Daly 314-962-5260 home phone  
or 314-541-3085.**

**Will empty tanks - Fish & plants not included.**

**There's still room for your ad here!!**

## Got \$\$\$\$ swimming in those Tanks?

MASI Members of good standing can place a fish related classified ad in the Darter for free. Send your ads to the editor. Deadline is 10 days prior to the January, March, May, July, September or November MASI Meeting. The Darter is Emailed about 3 days prior to each meeting.

Items also Change Constantly on [BAND.us/@MASISwap](https://band.us/@MASISwap)!

- **MASI BAND Swap page** - <https://band.us/@masiswap> - Because of nefarious activity by non-identified attackers, this is now a CLOSED Group specifically for discussion and posting about upcoming MASI SWAPs and other sales efforts by members or others with approval on BAND. Post any sales, re-homes or other livestock exchanges here. Do NOT post these to FaceBook.

Those wishing to join will need to register with BAND, and then ask the moderator to join the group. It's not hard, it's just a name, email or phone #, a confirmation text or email. Then request to join, answer all 3 simple questions that are set up, then once the Moderator approves them, you are in.



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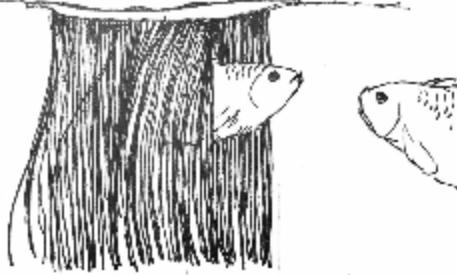
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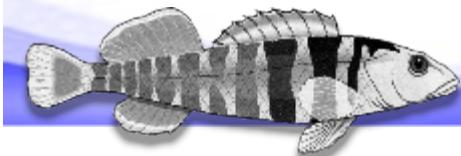
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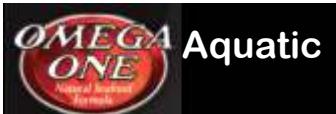




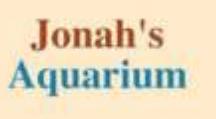
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