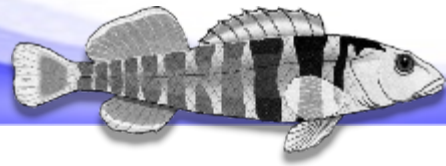


The **DARTER**



November/December 2021



The DARTER

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THE DARTER

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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.

EDITOR Chuck Bremer editor@missouriaquariumsociety.com www.missouriaquariumsociety.com



Cover -Shark Canyon, STL Aquarium
© Ian Eggert



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FROM THE PRESIDENT'S TANK

Pat Tosie

Thanksgiving, Christmas and New Years are all fast approaching!

Our December meeting will be our Annual Christmas party. MASI will provide the meat and everyone should bring a side dish to share and bring your own drinks. If what you bring needs electric, please bring an extension cord and if you have something that needs to be cold, please bring it in a cooler with some ice to keep it cold.

At the Christmas Party we will also have an awards ceremony for awards earned over the past years.

2022 is just around the corner and it will bring us a lot of

changes. For 2022 we will have our public auctions and swaps at the same locations as our meetings: Jost Chemical courtesy of Jerry Jost and his company. Thank you Jerry, we appreciate your support and the use of your building.

MASI 2022 Public dates are:

- 🐟 February 6 MASI's Winter Auction,
- 🐟 April 30 MASI's Spring Swap,
- 🐟 May 1 MASI's Spring Auction,
- 🐟 August 7 MASI's Summer Auction,
- 🐟 September 25 MASI's Fall Swap and
- 🐟 November 6 MASI's Fall Auction

Don't forget to bring your BAP, HAP and other donations for the MASI Challenge to the meetings. We are going to continue the Challenge and we will be donating to another worthy cause in 2022. Let's make great donations and challenge other clubs to do the same!

MASI transitions into another year with well over 200 memberships, it would be super if we could reach 300 in 2022! The more members we have, the better the club can move forward. We can do it as long as everyone helps out and spreads the word about MASI.

Be sure to Register for one of the concurrent 2022 Aquatic Conventions! It will be 4 fantastic organizations, each having their own speakers (the American Cichlid Association (ACA), American Killifish Association (AKA), American Livebearer Association (ALA), and the Australia, New Guinea Fishes Association- North American chapter (ANGFA-NA).

This combined event will be massive and is being called the Triple Crown! You can reserve your place at www.Convention.Cichlid.org or any of the other Association's websites. An easy drive just to Louisville, KY, it will be held July 27 - 31, 2022 at the Louisville Marriott East. Convention combined events includes numerous Auctions, Manufacturers, Vendors and lots of fish talks with people from all over the World!

This Convention you won't want to miss!

Keep looking below water....

Come Help Fill Our New Space!







2021 has been a wild ride!

Lots has happened with the Missouri Aquarium Society, we are now the largest we have ever been, and still growing!

With the end of 2021 most will need to renew your MASI membership! See the directions for that on **page 9**. The easiest is by PayPal from MASI's Membership page but there are other options now that be are meeting F2F again.

There are several things happening as we near year's end that you **MUST** check in this Darter:

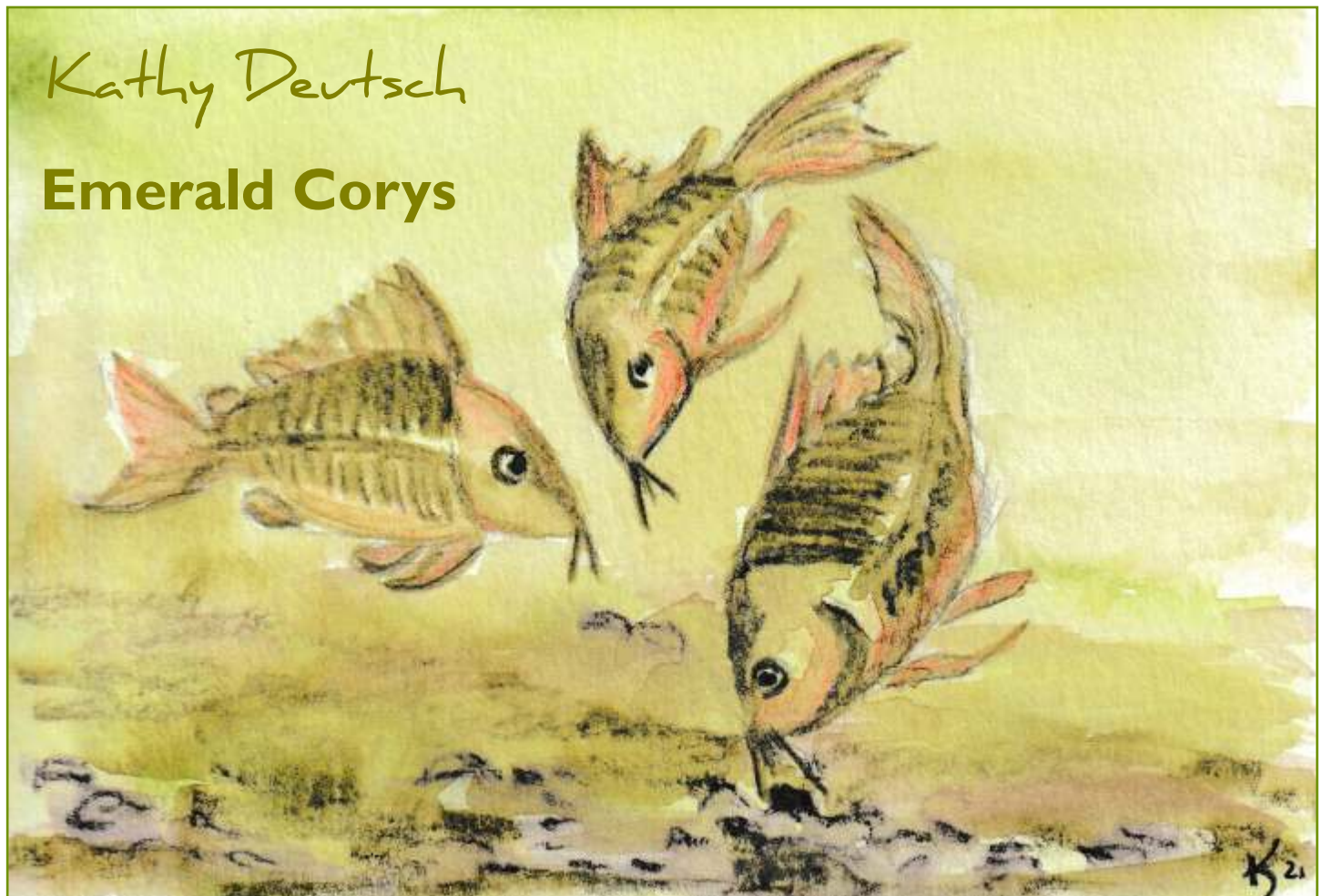
-  **Members ONLY sourced auction, this Thursday: Page 6**
-  **Christmas Party, Awards presentations, with dish-to-pass Banquet and Gift Exchange and traditional Food Drive: Page 7 with details on pages 8 & 10**

Both are at our new venue for club meetings, our public auctions and swaps...come and check it out!

This Darter issue contains much fishy and club content, including 3 pictorials of 6 pages and 10 articles covering 18 pages. I bet you can find something you like!! Please send me a note by return email what you liked the best. We need your input to plan the next issue.

Content deadline for the first Darter of 2022 is January 11th.

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





Special Order Fish Auction MASI Members Only

MASI General Meeting Thursday, November 18th, 2021!!

New or Renewal 2022 Memberships will be available at the meeting or from our membership page:
<https://www.missouriaquariumsociety.com/membership.htm>

A Catalog may be published to members of record if we get fish information in a timely manner.

To be held **at our new location:**
7:30 PM; Jost's Chemical Complex, 8195 Lackland Rd, St Louis, MO 63114



These fish from previous years entered MASI member's tanks, many being perpetuated in the Breeder's Award Program!

In addition to specially sourced fish, there will be the usual BAP, HAP, Challenge and other donations available for bid.



Food,
Fellowship
& Fun!

Missouri Aquarium Society
Year End Party and
Presentation of
Accumulated
Awards, December
16, 2021
Christmas Party

Jost Chemical Complex:
8195 Lackland Rd., St
Louis, MO

Includes Gift
Exchange

Bring a Fishy gift to Exchange
or bring a non-Fishy one if
you prefer. Everyone who
brings a gift is entered into a
Raffle and receives a
replacement to take home!!

To help her plan, please tell
Lora Watson at the November
meeting what dish you are
bringing to share for
Christmas!

Support MASI's Food Drive at
the Door!

Accumulated BAP & HAP lifetime awards as well as Member of the
Year, Hobbyist of the Year, Writer of the Year and maybe the
Presidential Service Award, many with monetary value, will be
presented this evening.



NO Mini-Auction in
December

You Need to
Be There!!



Help MASI support OPERATION FOOD SEARCH AT THE CHRISTMAS PARTY - DECEMBER 16, 2021

MASI and Jost are hosting MASI's traditional Christmas food drive.

This year we are collecting for **Operation Food Search** now in its 40th year helping heal area hunger. Operation Food Search conducts food drives, and hosts cooking classes to help families become independent. Good nutrition is important, and Operation Food Search works with that as a priority.

OFS will drop off 3 wheeled bins at the entrance to our party, each holding 175 lb and will pick up the full bins the day after, letting MASI know how much we collected.

The 2021 food drive directly targets a need in our community and may help fix it.

Thanks, everyone, for participating!

Kathy
Deutsch



Help the Missouri Aquarium Society support Operation Food Search.

Bring your food Donations to the Christmas Party; 7:30 PM on December 16th, 2021 at Jost Chemical Complex: 8195 Lackland Rd, St Louis, MO 63114

Most Wanted Food Drive Donations

Light Tuna & Salmon (canned & pouches) & Canned Chicken

Soup, Chili, Stews with Meat/Beans (a meal in a can)

Canned fruit (in natural juices)

Diced Tomatoes, Tomato Paste, Canned Spaghetti Sauces

(low sodium appreciated)

Canned beans (low sodium appreciated)

Instant Brown Rice, Whole Wheat Pasta

Boxed Meal Kits

Canned Vegetables

Dried Spices: chili powder, garlic powder, cumin, oregano, basil

Deodorant, Toothbrushes & Toothpaste

POP TOP CANS ARE ESPECIALLY APPRECIATED



Operation Food Search

Healing Hunger. Strengthening Our Future.

Items NOT Accepted in OFS Food Drives

NO Glass containers (due to breakage)

NO Expired Items

NO Medicine

NO Open containers—Partially eaten food

NO Junk food, chips, candy, sweets

NO Ramen Noodles

NO Alcoholic beverages & soda

NO Juice boxes & Juice pouches

NO Perishable food



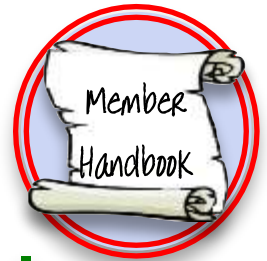


MASI is still growing!

MEMBERSHIP CHAIRMAN

Robby Simmons

Arun Dev	St Louis, MO
Daniel Fogarty	Ferguson, MO
William Fogarty	O'Fallon, MO
Malia Hill	Columbia, MO
Angelo Ramos	Ballwin, MO
Christine & Jesse Richardson	House Springs, MO
Angela Roam	Ballwin, MO
Johannah Thomas	Florissant, MO
Ken Warren	Ballwin, MO
David Farel	St Louis, MO
Brian Hoffman	O'Fallon, MO
Diane Mueller	Hazelwood, MO



**Welcome
the new
Members!
since the
last Darter!**



Don't Forget to Renew your MASI membership by March, 2022 if you want to continue to get the DARTER in 2022??!

A Year's membership is \$15 and includes an electronic subscription to The Darter published six times per year. Join or renew membership at any meeting, most club events, by PayPal from the MASI [Website's Membership Page](#) or by contacting Robby Simmons, membership chair, Email: robby_simmons@yahoo.com.



Memberships

**Help MASI Support the Aquarium Hobby!
Support Locally by shopping our supporters.
Support Nationally & Internationally by supporting the MASI Challenge.**



EXCHANGE EDITOR'S CORNER

Steve Coxon



Club Exchange Articles received recently-

If you see one you'd like to read, please let me know!

There is a lot of excellent content out there, but **The Darter** is among the very best and often reprinted. Most other newsletters have only one or two articles. We are very fortunate to have such a vibrant club with numerous contributors willing to share their knowledge and experiences.

I encourage you to share your knowledge and experiences as well by writing for the DARTER!

Publication	Issue	Article(s) of interest
Fin Flap (EIAA)	November 2021	Propagating <i>Anubias Nana</i> Flowering (2006 reprint)
TropiQuarium (MCAS)	November 2021	Websites of Fishy Interest
The Tropical News (SAS)	November 2021	Microscopes and <i>Fundulopanchax Gardneri</i>
Raleigh Aquarium Society Newsletter	November 2021	Collecting and Keeping Native Fish
The Bucketette (BCAS)	November 2021	My Fascination with Shell Dwellers
TropiQuarium (MCAS)	October 2021	What Me? Volunteer?
Rivus Newsletter (ANGFA-NSW)	October 2021	Frugal Fish-Keeper (DIY fish hatchery)
		<i>Paratya australiensis</i> - Freshwater Glass Shrimp
		<i>Hypseleotris galii</i> - Firetail Gudgeon
The Tropical News (SAS)	October 1 2021	Breeding <i>N. multifasciatus</i> <i>Eichhornia crassipes</i> Non-Native Invader (Reprint of MASI's Micah Issitt)

It is exciting to receive newsletters from around the country and beyond!



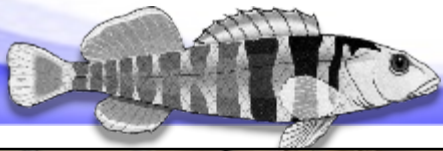
Christmas party... December 16th!

I would like for everyone to sign up and let me know in advance what they plan to bring and will have a sign up sheet at the November meeting for that purpose.

I considered making a menu and then having everyone to sign up to bring something off of that list, but I also like the idea of certain people bringing something that everyone has come to expect or that they are really good at making so will more than likely will just stick with a regular sign up sheet.

Thank you! - Lora Watson





The DARTER



MASI SWAP

Sept. 19, 2021





Join fellow Aquarists at the Missouri Aquarium Society's SWAPs

Vendors from across the country as well as local.

Nearly anything you're seeking will be there including Food, Equipment and high quality aquarium grown and bred Plants and Fish!

Spring SWAP April 30, 2022

Fall SWAP September 25, 2022

All events in 2022 will be held at our NEW location:

Jost Chemical Complex
8195 Lackland Rd
St Louis, MO 63114





BACK in STOCK! Same Price!
MASI INSULATED FISH BAG

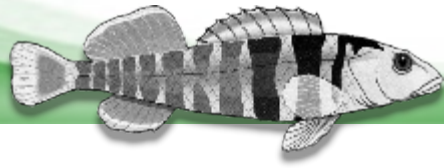
Transport your fish in style!

Insulated, rolls for easy transport, expandable, fits in luggage, carry your fish anywhere, keep them safe from temperature changes and display club pride!

22" x 16" x 12" - 100% recycled materials

Get one before they're gone at monthly meetings or other events while they last!





Wabi-Kusa Creation

MASI's October Aquatic Hands On

By Melanie Holmes



INSTRUCTION AND HANDS-ON experience developing their own miniature aquascape was provided Missouri Aquarium Society's members by Melanie Holmes. Melanie is a very active Aquatic Gardener and participates in many of the AGA's activities, aquascaping and contests.

The Demo/Hands-On was video taped and is available to view on the Missouri Aquarium Society's YouTube Channel: <https://TinyURL.com/MASI-video>.

Here is a brief guide to making your own Wabi Kusa at home with photos taken from the event.

Tools and equipment:

- **Container** to hold the final creation as it grow and develops.
- **Square of fine netting or tulle** used to encircle your dirt ball. Black or brown colors usually blend best with the soil.
- **Black cotton thread** to tie things together.
- **Tweezers to position** plants and to help tie the thread in close quarters.
- **Paper plate or newspaper** to work over.
- **Misting water bottle.**
- **Plastic Cling wrap** to seal the container.



Plants that work well include:

Many stem plants, such as Hygrophila, Ludwigia, Rotala, Pennywort, Pogostemons and others work well.

Some ferns such as Indian fern, Java fern and mosses, such as Java moss and similar species can also work.

Avoid always submerged plants such as Vallisneria, Myriophyllum and Hornwort.

Experiment and see what works for you, some plants are surprising!!



Now, Get Those Hands DIRTY!

Generally follow these steps:

- **Soil mix:** Begin with about 2 cups of Aquasoil, ½ cup potting mix and, optionally, powdered clay to hold it together. This mix is a good place to begin, but experiment. Reducing the clay reduces water cloudiness.
- **Add water** to the the substrate mix to form a substrate ball. Continue adding water slowly until substrate retains a ball shape
- **Transfer the formed substrate ball** into a cradle of fine tulle netting and use thread to cinch it up and tie into a ball. Cut off excess netting and thread. Put the knot on the bottom.
- **Cover the substrate ball with a thin layer of moss and plants.** Wrap the plants and mosses with thread to hold in place and tie it off.
- **Put the Wabi Kusa in a container** with some water and cover with cling plastic wrap to hold in the moisture and humidity. Set the container under a light or in a window.
- **Gradually remove the cling wrap** over a period of a few weeks as the plants grow and acclimate to being emersed.

Enjoy your Wabi Kusa and try another!



After 2 ½ Wks Grow Out!





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 the club is run. Meetings are currently being held by invitation on the ZOOM platform. Contact the Webmaster (Charles@inkmkr.com) if you desire an invitation.

Give the Council your Feedback or Support!

Next Executive Council Meetings, on ZOOM except as noted:

Thurs, December 2, 7:30 PM (For Nov'21)

Thurs, January 20, 2022, 7:00 PM in Person (For Dec'21)

Thurs, January 27, 2022, 7:30 PM



COUNCIL MEETING 8/26/21

Angela Hellweg called the Zoom meeting to order at 7:31. Present were Jake Harris, Scot Roach, Charles Harrison, Mike Huber, Kathy Deutsch, Chuck Bremer, Caleb Pitman, Steve Coxon, Gary Lange, and Chris Mohrle.

ANNOUNCEMENTS:

This Council Group Email Address reaches all the Executive council at once: Council@MissouriAquariumSociety.com

The next Council meeting is Sep 23.

REPORTS:

- **SECRETARY:** Angela read the Minutes from the July meeting. A motion to approve was made by Mike Huber and was seconded by Charles Harrison. The motion passed.

- **TREASURER:** Scot read the Treasurer's report. A motion to approve was made by Mike Huber and was seconded by Kathy Deutsch. The motion passed.
- **EDITOR:** The deadline for Darter submissions is Sep 7.
- **BOWL SHOW:** There has been only one entrant at the last three



meetings. The possibility of going back to an online bowl show was discussed.

- **SPEAKERS:** Jake is looking for suggestions for a speaker at the Sep. General meeting. Melanie Holmes will be doing a hands on workshop in Oct.
- **SWAP:** 30 tables have been sold so far.

OLD BUSINESS:

- Bruce Mayhew is storing the MASI Show supplies.
- A new membership chairman is still needed.

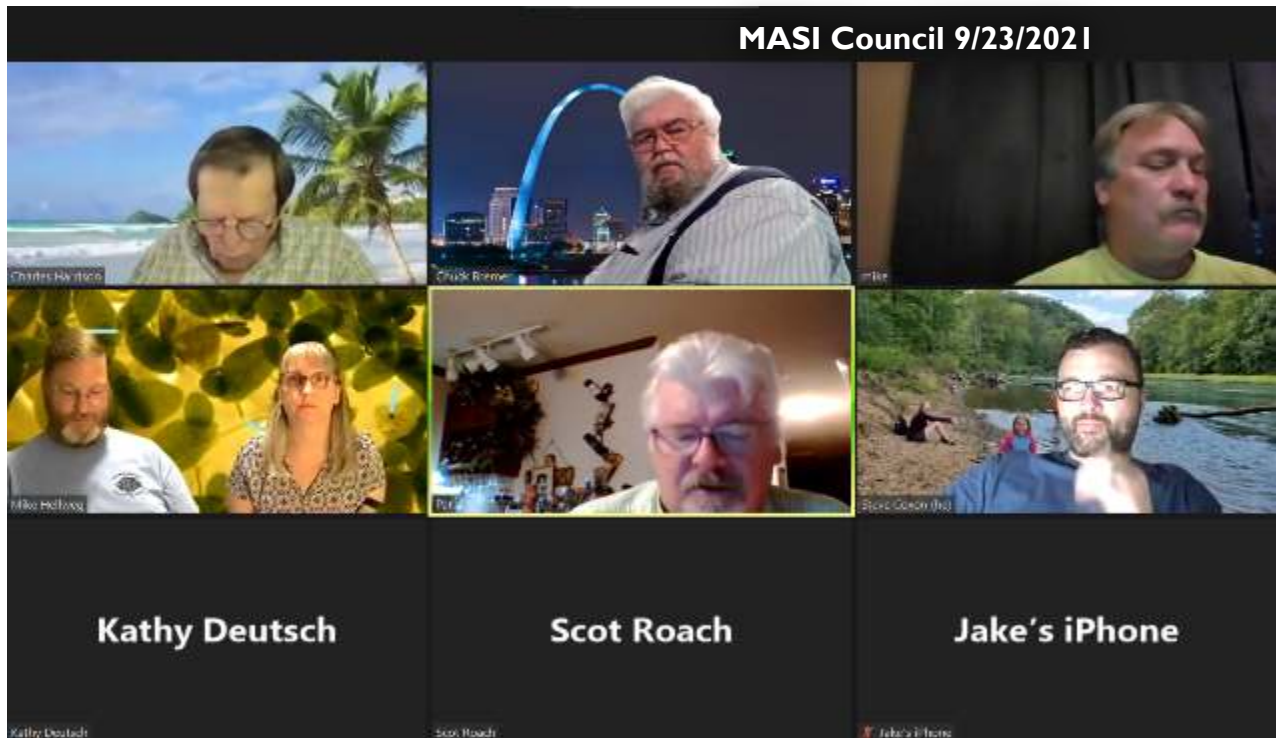
NEW BUSINESS:

- A suggestion was made that Jerry Jost's 2022 MASI membership fee be waived since the General

meetings are being held at his company at no cost to the club.

- Steve Coxon suggested using a document camera to project auction items.

A motion to adjourn at 8:25 was made by Charles Harrison and was seconded by Kathy Deutsch. The motion passed.



**COUNCIL MEETING
9/23/21**

Pat Tosie called the Zoom meeting to order at 7:30. Present were Jake Harris, Scot Roach, Angela Hellweg, Kathy Deutsch, Charles Harrison, Mike Huber, Steve Coxon, Mike Hellweg and Chuck Bremer.

ANNOUNCEMENTS:

- The next Council meeting is Oct 28.
- The next Auction is Nov 7.

REPORTS:

- **SECRETARY:** Angela read the Minutes from the Aug meeting. A motion to approve was made by Mike Hellweg and was seconded by Chuck Bremer. The motion passed.
- **TREASURER:** Scot Roach read the Treasurer's report. A motion to

approve was made by Kathy Deutsch and was seconded by Steve Coxon. The motion passed.

- **EDITOR:** The deadline for Darter submissions for the Nov/Dec issue is Nov 9.
- **AUCTION:** Mike Hellweg said that 50 tables will need to be purchased in order to have auctions and swaps at Jost Chemical. Chairs will need to be purchased also. These can be stored at the site.
- **BOWL SHOW:** The bowl show categories will start fresh next year. Possibly doing only online bowl shows was discussed.
- **CORRESPONDING:** Pat said he has received a few donations.
- **WEBMASTER:** Charles said that Officer & Council member names will be updated.

- **SWAP:** There were around 150 attendees.

OLD BUSINESS:

- No final numbers are available for the ACA convention yet due to the issue with Square funds.
- Robby Simmons will be the new Membership chairman.
- Awards still need to be give out, trophies will need to be ordered. It is hoped to present them at the Dec General meeting.

NEW BUSINESS:

- Jake would like to re-orient the room set up at Jost Chemical for the General meetings.
- The FORC meeting needs to be scheduled.

A motion to adjourn at 8:24 was made by Charles Harrison and was seconded by Mike Huber. The motion passed.





MASI's 2020/21 Challenge Ends Soon!!



MASI needs 2022 Nominations!

CONSERVATION FISHERIES
PRESERVING THE SOUTHEAST'S AQUATIC BIODIVERSITY

CFI is a non-profit, 501(c)3 organization in Knoxville, Tennessee, dedicated to the **preservation of aquatic biodiversity** in our streams and rivers by developing techniques to propagate nongame fish, including **imperiled species** and is 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.

THE CURRENT MASI Challenge will be **ending soon**, only November and December left to show your support for the Conservation Fisheries, Inc. Group and their efforts to preserve the Southeast's Aquatic Diversity.

MASI could very well set a new record for **contribution our Challenge** efforts as the current amount to be sent them is only \$150 behind the previous highest effort in 2017.

Here are several of the past contributions MASI has earmarked for such efforts. All together **they total to**

nearly \$15,000 of support for worthy, aquatic related causes in the past years!!

Now it is time to select where to direct our efforts for 2022! Do you know of a worthy cause for our Challenge efforts in 2022?

Please bring your 2022 nominations to the November, 2021 general meeting where we will collect nominations for the Council to consider for 2022.

Help us start the year off right with a worthy cause!! We maintain a status as a 501(c)3 Organization to help support our philanthropic efforts.

Past Missouri Aquarium Society Challenges

2014	Coral Restoration Foundation	\$1300
2015	ALA's Morelia, MX Fish Ark	Abt \$2000
2016	Amazon Research Center for Ornamental Fishes	\$1318
2017	Penn St & Ad Konings's Stuart M. Grant Fund	\$2682
2018	ANGFA's Running River Rainbows	\$2130
2019	AKA's George Maier Fund - 2019	\$2524
2020 & 21	Conservation Fisheries Inc.	\$2541
2022	What's Your Nomination?	\$?,???





MASI AUCTION MESSAGE

Mike Hellweg

they wanted, and tanks sold well, too. We had a minor glitch with the credit card reader, but were able to utilize a backup on my phone that allowed us to manually enter everything. I was so busy I only bid on one item all day – and Kevin Wise outbid me! What a lot of fun!

Please note that for 2022 we will be moving to a new location – the same room as our general meetings. Thanks to Jerry Jost for letting us use the space in his new building! Room rental is FREE, but we will have other expenses! MASI will need to buy some tables and maybe some chairs for Jerry, but that’s a small price to pay. **Thanks Jerry!**

For Public events and MASI meetings we will also need help setting up beforehand, and help taking things down afterwards. More on this and possible refreshments in the next Darter.

For all of our 2022 major events, we’ll be moving to:

**Jost Chemicals
8195 Lackland Road
St. Louis, MO 63114**

Follow the MASI Signs and take the road to the left between the lake and I-170 to the parking lot.

Happy Thanksgiving, Happy Hannukah, Merry Christmas and Happy New Year! I hope we see you all in the new year.

And for now, 'nuff said,

Mike :
Auction@missouriaquariumsociety.com

Auction Report #55
Wow! The 2021 Annual Fall Auction was a huge success! Nearly every seat in the room was full -but spread out. **We had 454 items with an average price more than at any auction ever before!**

Folks seemed happy to get the fish and plants that

We're Moving!



From the intersection of I-170 and St Charles Rock Rd (MO-180).

Turn North from MO-180 at the 1st traffic light East of I-170 into the complex.

About 1/2 mile from the light, turn sharp left at the “Office” sign between the small lake and the interstate to reach the parking lot.



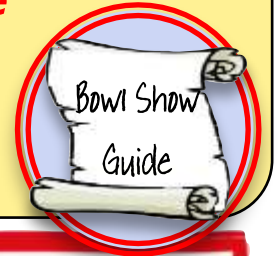


CHRIS
Bowl Show

Bowl Show Contests



Because of recent low participation and COVID logistics, Bowl Shows, both In-Person and Virtual, are temporarily suspended till 2022!! Please give your feedback to Chris Mohrle and check the January, 2022 Darter for future Directions.



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50+ Tanks!



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HOLLY

Social Media

MASI SOCIAL MEDIA

Holly Paoni

Follow up on

Common Questions asked on Social media

Q: Stocking Questions of all types arise that range from compatibility to how many of this fish can I keep in this tank?

There are several related questions to be answered:

☞ **Will they fit comfortably in that size tank**, with enough room for biology and swimming?

After that, it's a lot of "it depends" ...

☞ **Is the tank planted**, how heavily, what kind of plants?

☞ **Is Filtration provided**, how much water will you change, and how often?

☞ **How often do you test your water?**

I keep 24- 36 White cloud mountain minnows in a 35 gal tank, but It's well planted, and gets at least a 50% water change weekly as I test water often and do lots of water changes. If you want to do a lot less work, you need to stock much lighter.

Compatibility questions arise with stocking. These are usually hard to give a straight answer to, as again there are variables. What works for 1

person may or may not work for you. These variables include:

☞ **Tank size.** The bigger the tank, the more likely it may work.

☞ **Cover-** The more cover and line of site blocks you have, the more likely it may work.

☞ **Fish temperament.** In some species, this can vary wildly while others are fairly consistent. For many cichlids, bettas & gouramis species temperament can vary greatly between individuals in the same species.

☞ **Number of fish in tank.** Some are loners, some are social, some are really chill unless breeding. So sex ratio and social needs need to be taken into account.

Stocking level is another reason to research fish prior to buying. You may learn a species needs a part of the tank to itself- like a gourami wanting the top 1/3, or that some fish, Corydoras as an example, are social and primarily stay on the bottom 1/2 of a tank. They may go up for air, but it's usually so quick they won't be noticed.

A stocking example: A recent 20 gal was was moderately planted that had a few tall crypts, a clump of Hygrophilia and a piece of driftwood going catty corner across the open front 2/3 of the tank. There were Java ferns and moss on the driftwood. One

side had a sponge filter and a coconut cave, the other anubias on rocks .

This tank held 1 male Honduran red point, and a school of black skirt tetras for several months. The only time the male cichlid bothered the tetras, was if they got within 1 inch of his cave opening. Then he'd flair and give chase as far as the driftwood. No nipping, no craziness. About a 6-7 inch quick chase. The driftwood, provided as a line of site blockage. Both species crossed its boundaries without issues. The male Red Point was just territorial about his cave. The tetras were not scared, as they had the tall crypts and hygrophilia, plus the shorter anubias to escape into.

That set up may not work for someone else if their tank is more open. Amount and type of cover makes a huge difference and sometimes trial and error is the best teacher.

Before purchase, please research the fish catching your interest. See the September, 2021 Darter of a suggested list of websites or ask MASI members online.

There are plenty of reputable and free websites and books that will give you great info on various species.

We'll cover other often asked questions in future issues, till then, research your species!

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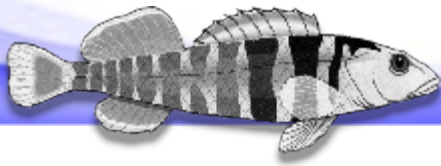
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Pandemics, Business and Luck

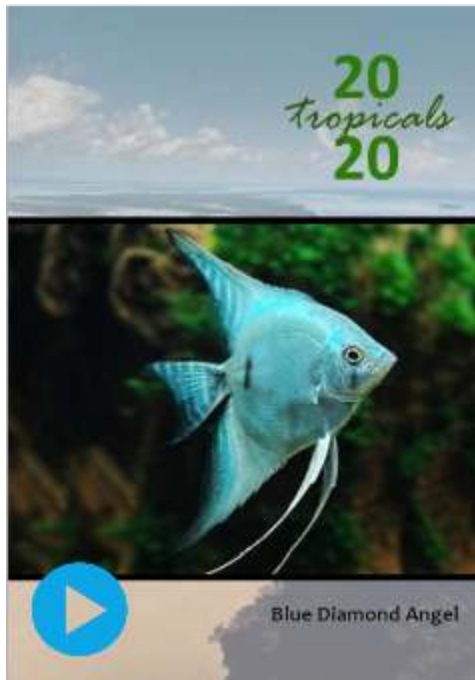
Surviving 2020, 2021 and Luckily emerging stronger!

By Kevin Plazak

IN CASE YOU are wondering where the heck I went, I dealt with a pandemic messing with me and my business.

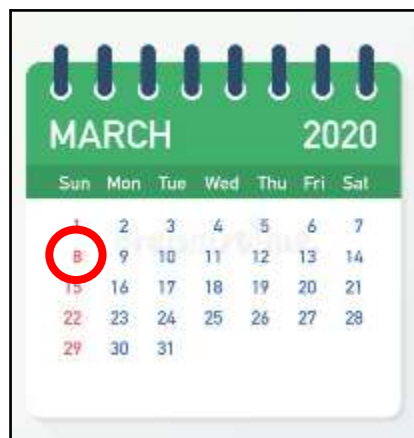
I learned that when I work over 40 hours a week, walk my dog 1 hour a day (almost every day), do basic home chores and anything that comes up, I barely have time for 8 hours of sleep every day. After talking to my wife, we figured I could take up hobbies again once I was working at or less than 40 hours a week.

September 20, 2021 is week #2 of about 40 hours -- writing was my first indulgence! (And as I sit here, my wife just got home and is giving me the side eye. The dog is just staring... RUDE!)



You know, when you boil everything down to its purest form, succeeding in business is a choice.

You will either stay open by any ethical means necessary or you will fold. Assuming ethics don't hamper your choices, staying open will be easier. Let's walk down my pandemic path and it should bring you up to speed. The year was 2020...



The pandemic was just starting to take hold in our region with the Kirkland, Washington nursing home, ground zero for the pandemic in this region, only three hours from our shop and ten minutes from a customer's front door. No one really knew what

was true, but our governor declared a state of emergency on March 8th due to the pandemic and issued a stay-at-home order on March 23rd of 2020. Essential employees and essential businesses only!

We had a lot of luck in March, most of it bad. Many customers closed or did minimal hours and almost no orders. This wasn't great for the bottom line, but it helped our business because all of the staff quit. No orders meant we didn't need the help – win win! One of my staff quit because she was pregnant. One quit because her boyfriend had a heart condition and she didn't want to expose him to anything lethal. One had put in notice a while before March and we had hired a replacement who didn't quit! But we didn't really need him since the world was burning. *15 years of institutional knowledge gone in two weeks.*

But we were an essential business and THAT alone was likely the cause of us not closing. That was the really good luck in March.

Rent was due every month, no reprieve was offered by my landlord. I have a tenant to comply with local ordinances regarding wholesale facilities. He kept paying his bills and I didn't have budget to cut him slack.

Kevin's PART 3 to A "Hobbyist's" Guide to Selling Fish, published in March 2020, coincided with the onset of the COVID pandemic.

Since then he has been "taking care of his own business". Here are experiences and adjustments made to survive.



So, we all sucked it up and paid our bills. Then April hit and I was pretty sure that the business was going to fold.



We did about 1/4 of our regular sales in April, almost entirely feeder items. Everything we sold was a low or no margin item with delivery charges to the customers going through the roof. The bank account was sucking wind, but thankfully our main supplier of fish closed in March so we couldn't buy anything. No money out and a little money coming in means that we might just survive until we run out of fish. We had about \$20K in fish and that would keep us open for a few months. Maybe the business wouldn't close?

Then our main competitor in town closed. This was a mixed bag because our main competitor made most of their money selling feeder items and, although they closed, to this day they are still delivering feeder items. We didn't make as many inroads as we would have liked from that closure, but we did pick up all the companies that bought fish from them.

April was a low point for everyone in Portland. The question was, is their closing a clue for us that we should quit too OR double down and really dig for every penny?

May was the turning point. After working for eight weeks alone and every day of the week, the orders started trickling back in. May was filling with sales, each week better than the last. We needed more help than one old man and one cranky dog, and we needed it quick. An ex-employee of ours posted the job on Facebook and multiple people suggested the same person. That seemed like a good sign.

We hired Maria and she is still working for us today. Single best hire ever.

May also brought us a couple of other bright spots. We had applied for the PPP loan and we were approved in late May. The application was filed in April before employees were a thing and we wanted to ensure there was money for rent until the end of the year. We applied for and got \$4,728. That tiny amount of money made sure we would stay open until January 2021. \$4,728 is essentially a check to a single fish vendor every week, but at the time my fish vendors had closed. Many vendors had also stopped shipping fish and that small loan along with the funds in our bank account should keep the rent paid, lights on and heat flowing. Win!



Another big moment happened while I was delivering feeder items to a customer. We talked for a bit, I told them my company could pay the bills until the end of the year, but we were in a bad spot. He had started feeling the up tick of money spent on pets during the lockdown and handed me a blank check. This store owner owns



three pet stores – he is an accomplished business owner - owning over 10 that I know of- pilot, family man, lover of beautiful machines and inventor. We should not have been on his radar so prominently – but he knew we made him a lot of money in his many fish rooms. The faith he had in us probably did more than any single event during the pandemic.

So the staff was set until we needed more: A driver who worked one day a week but wanting full time, an office worker gaining stamina and skills in a humid warehouse, an old guy who was too old for this sh*t... what could go wrong? The sales kept growing month after month until July blew every sales record we had ever had! We continued to break sales records every month from July until February of 2021. In May, our main vendor reopened and fish buying became much easier. It was far from perfect, but it was a LOT better than nothing.



People had disposable income and no place to dispose of it. Pet stores were considered essential businesses as dogs and cats need their brand of food. Reptiles need live food. As long as the pet store is open, people used their disposable income on fish and tanks like no time we have ever experienced. Stores that rarely cracked \$500 invoices from our company were blowing \$1,500 a week! Things continue to be really good to this day. But, for a moment there, things were a



bit more terrifying than you could call “comfortably terrifying”.

I would love to sum up how to continue to survive in a pandemic but I don't have an answer. I got lucky that pet stores are essential. **I got lucky** that just enough good luck fell my way. **I kept showing up to work and doing my job every day** – hell or high water. And, while I don't have the answers, I believe Teddy Roosevelt has the closest answer to how one stays open when times are tough:

"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who



errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat."

If things are getting very bad, it is brave to consider a future for yourself that is different from the path you are currently walking. Changing

careers or fighting for your existing career can be “striving valiantly” if you do with your eyes open. Minimize your risks, maximize your options and always dare greatly!

Sorry for the bluntness, business is what I know, but I still am a hobbyist. Talking with others in various aquatic clubs once in a while has worked me up into a froth and I am renting a 2,500 square foot space to turn into a fish room, possibly a fish club, and looking for some hobby again.

Hopefully things will stay smooth at the shop and I will get to participate with the club more in the future.

I may have lost my mind...

Anyhoo -- it's good to chat again!

Continuing Recovery and Growth - Business Space considerations for the Future

By Kevin Plazak

We added a lot of tanks during the surge in sales. I tore out the marine section, as did many of my customers, and added 102 more tanks so far. We are about to get 36 more running some time this week. Every new tank allows me to pick up a little more business. Hopefully we'll have about 300 new tanks when all is said and done. That would be about double the number of cubes of water since 2019



before the pandemic.

I have always had fewer tanks than the other kids. Making a wholesaler work with 300ish tanks is a function of weekly inventories, running the stock levels always lean and sometimes stocking one tank with two

species. I keep gar-like characins with nerites for example -- it is a good pairing.

With three hundred tanks of fish (or snails), we make a catalog of 11 pages with 20 to 35 items per page that makes customers happy enough to order weekly.

Average tank size today works out to 24 gallons but when I am done with the installation of the new tanks, we will be at an average tank size of 19 gallons.

I found that if I want to carry interesting, rare or expensive fish I will need space for them to sit for months. Single specimens don't need a lot of space, so adding a host of 10 gallon tanks will allow me to order a single expensive fish, or a group of 3 expensive plecocs -placed one per tank if they are t*rds- or a pair of mid-sized cichlids, with a divider of course, or a single big fish per tank... the options are endless. Now they need to pay for their stay in a 20/30 gallon tank, and that is tough to make work when a common fish will sell out of a 20 gallon tank every week or two and net me at least \$100 a week with that turnover.

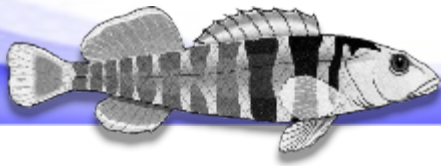
With 300 tanks now, I would say 100 tanks pay all the bills. And many of those 100 tanks are duplicate species in multiple tanks -- Rummynose, Otocinclus, Guppies... they all get at least three tanks when they arrive at the shop and one or two tanks when I am running

low. A Rummynose tank can often net me \$400 in a week, whereas a Blue Tetra tank can net me \$100 one week and \$0 for the next two weeks. Without both (or other less popular offerings), folks will look for other wholesalers. So -- I need about 100 to 150 items in stock to stay open and as many attractive items as I can pack the place with -- and the weird/expensive stuff needs to rotate all the time.



So, the really long answer is, you will do just fine as a wholesaler with 100 tanks and all the right items, but you need about 200 to 300 tanks to be a wholesaler that can pick up new customers regularly, in my opinion. My data supports that finding, but I am also the salesman, manager, accountant, buyer, etc... so I am obviously affecting my data and making subtle choices I wouldn't make without all the data of every facet of the shop. There obviously other things that matter, but the list of items for sale sells you to your new customers more than any other thing. A clean, full, interesting list that actively changes will garner the most return for the effort.





Consider Aging...

...of both the fish and its keeper -

By Kathy Deutsch



I F THE PANDEMIC has taught me anything, it is that if we are lucky, we get to grow old... So, too, our fish and our tanks age.

I know I never think about aging aquarium seals, sagging stands, or broken heaters until I see water on the floor. The zap when I touch a tank tells me something electrical has shot craps. It's a wacky idea, I know, to have a checklist of what ages out in an aquarium, But thanks to the pandemic, I had time to worry about fish tanks BEFORE something broke. Truth to tell, it was nice to have something different to worry about.

WHAT AGES UNDER NORMAL CONDITIONS

- 👁-the seals of the tank
- 👁-the corners, if the stand or the floor shifts
- 👁-the plastic frame of the tank
- 👁-the cover, hood, lights and the cord/plug
- 👁-the stand (depending on the material or if the floor shifts)
- 👁-tank decorations made from plastic (get brittle) or ceramic (glaze cracks)
- 👁-plastic plants
- 👁-the filtration and pump (even my 10 year go-to, the sponge filter, gets gummy)

- 👁-the heater (I put my hand on the front glass of every tank, every day when I feed. If the temp is off, that is an immediate unplug and pull the heater out. Hopefully, I have grabbed a bucket first to put the dripping heater in. Usually not)
- 👁-extra pumps and water movers in the tank
- 👁-FISH FOOD
- 👁-nets
- 👁-buckets
- 👁-THE INHABITANTS
- 👁-...and the fish keeper

The list above is a good starting point but it's MY aging that was a wake-up call.

As much as I wanted to recreate my "fish house" with my current abode, I had to face facts. I despise low-to-the ground tanks. Starting a siphon is bad enough, starting one and getting it to the bottom tanks is tiresome. And once my 50's were in the rear view mirror, I had to admit it held zero interest. I created a list, then, of what to consider in keeping fish as I aged.

FISH KEEPING AS THE KEEPER'S AGE CREEPS UP

- 👁-can I reach the whole interior of the tank easily, without a ladder?
- 👁-can I do a water change and clean or siphon?
- 👁-can I manage the filter(s)?

- 👁-can I continue to check everything every day, no matter how I feel?
- 👁-if I get sick, who can care for the fish?
- 👁-if my foot-long Oscar dies, can I wrangle it out of the tank? And where does the body go?
- 👁-if there is a problem, who can I ask for help?
- 👁-if water is leaking, what is my plan?

...actually, that is my going-in position with continuing to keep fish.

BUT WHAT IS MY PLAN?

Everyone has their personal "how to" in caring for their fish. But that evolves as we grow in the hobby, and also when we decide to do less. Aging creeps up. And cleaning the filter gets harder, or we just cannot lift one more bucket. Since we are responsible for these fish of ours, having a plan is a comfort. And one less thing to worry about.

I knew I wanted to keep fish until my last day on earth, if I could. Having had fish, in buckets, ponds, at the end of my fishing line, or in tanks since I was a baby, there was no way I was quitting. But keeping large or aggressive fish takes vigilance. Keeping big tanks takes a keen eye, a quick hand, strength, and again, vigilance.



What I enjoy, these days, is an underwater landscape. Rocks, plants, fish, all easy to care for. I want to avoid heaters and big filters.

Thanks to my time in the aquarium industry, I have developed sensitivities to aquarium bacteria. If I get filter muck on my arms, and don't immediately wash it off, I get a rash. And when handling big filter pads, that goo gets everywhere. Aging skin is thin, even without sensitivity, fish poop can cause a problem. Likewise, siphoning and glass cleaning poses a problem if the dirty water is soaking a shirt and jeans... and the floor... and the dogs.

Having swallowed enough tank water to fill a 10 gallon, I was not dealing with that any more.

I recently bought a new Fluval all-in-one tank. For over a decade I have kept a betta in my kitchen, using a small Fluval all-in-one, with a spider plant on top of the tank (roots in water), some rocks, and plants. The flow is too strong, so I unplug the filter during the day (when I feed) and turn it on at night. The LEDs are great.

This new, somewhat larger tank holds some guppies, some gravel, and some plants. It's a work in progress. I am finding new joy in spending a few minutes fiddling with the tank. It's easy to work on, and I can wash up quickly after.

My plan is to slowly quit the bigger tanks and add small ones. I still want to breed cories, and will keep a rack of 6 20 gallon tanks for that. Otherwise, I will keep small livebearers and the like. If I feel ambitious, I will get some *Apistogrammas*. I did a lot of work with *Panaque* (the blue-eye) and it took a lot out of me. I cannot imagine attempting THAT breeding colony again, especially since that fish comes from the wild. I think tank-raised species will be enough.

If I plan to keep on with fish, I know there will be times when I need help. My starting position is to do this alone. But if I get involved in cory breeding, things can get out of hand tank-wise.

I am blessed with 2 adult children and a son-in-law who keep fish. In a pinch, they can help. They will also be the voices of reason when the 256 gallon tank seems like a good

idea. Either that, or they will help me with it. My spouse already does a lot of work on the big tanks; I won't be adding to his workload.

If I plan to keep on with fish, I know there will be times when I need help. My starting position is to do this alone, but if I get heavily involved, things could get out of hand.

Ambition does not wane the way physical ability does. That, it seems, is the big "gotcha" of the hobby. I can see getting in over my head again. And that is where MASI comes in.

Fellow fish club members can advise, suggest, and bring me back down to earth when it comes to fishy schemes. If I do get in trouble with too much, I am confident I can ask the club members to rescue the fish and take the tanks/equipment.

My fall-back plan is a plea online to club members for HELP!

Finally, the water on the floor that spells trouble? No matter how I plan, that is still my problem.



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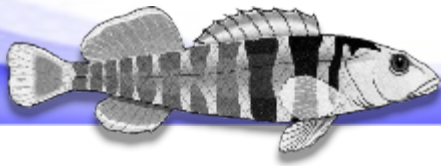


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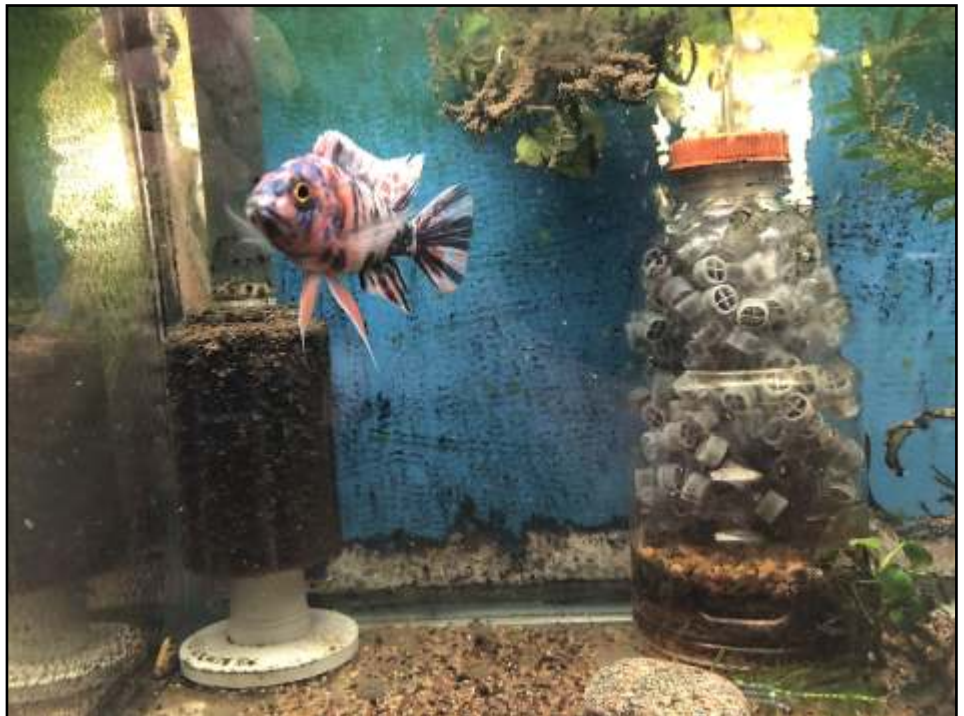


Plastic Bottle Nitrifying Aquarium Filter

By Art Pesch

Member both CAFE & MASI

1st printed in
CAFE's InSein
Menu, July 2021



My version uses these materials:

- 🐟 32 oz. sports drink bottles
- 🐟 1/8" or 3/16" clear rigid airline tubing
- 🐟 Fill bottle with 1 1/2" of Aquarium gravel
- 🐟 Add KI Micro Filter Material

of the bottle. The upper holes allow the air and circulating water to escape.

Drill another series of holes around the perimeter of the bottle about 1/2" above the layer of the gravel. Unfortunately these holes do not show up in the picture. These holes allow the water to enter the bottle. After all the holes are drilled use a small rat tail file to smooth the holes and then clean out the plastic bits from the bottle.

Next drill a hole in the center of the cap providing a snug fit for your rigid airline tubing. Cut the air

Hint: To drill the holes in the bottle a sharp drill is a must. Use a variable speed drill and vary the speed until you find the sweet spot. Practice on a scrap bottle first to get a feel for this.

ABOUT A YEAR and a half ago three CAFE members: Phil Nixon, Jerry Montgomery and I took a road trip to Indianapolis to visit Charley Grimes' fish room and some of Indy's aquarium stores.

While touring Charley's magnificent fish room, we were fascinated with his DIY nitrifying filters. His filters were all in very large tanks and were made of 64 oz. or larger sports drink bottles.

I made similar filters for the rack of 10 and 20 gallon breeding tanks in my heated garage & model airplane workshop.

To prepare each bottle I drank the sports drink and washed the bottle thoroughly.



Next I drilled a series of 1/4" holes around the bottle. The first ring of holes is about 1" from the top



KI Micro Filter Material (available from Amazon)





The lower holes towards the top of this bottle were a mistake and allowed too much air to accumulate, floating the filter with delivery tubing about an inch longer than the total height of the bottle.

Assemble the filters by thoroughly rinsing your gravel. Add

about 1-1/2" of the gravel to the bottom of the bottle.

Then add enough of the **K1 Micro Filter Material** to fill the bottle a third of the way to the top. Note: this is a trial and error process. Too much of the K1 material and it won't turn over no matter how much air you run through the filter.

Push the rigid tubing through the filter material and gravel to within an 1/8" of the bottom of the bottle.

Finish the filter by sliding the cap down the rigid tube and screw it tight. Adjust the tube so it's not touching the bottom of the bottle but is just above it.

Sink the filter in your aquarium and allow it to fill with water. Attach an air source to the tube and adjust the flow so there is a nice turnover of the filter material. If the material does not turn over, try a little more air flow. If that doesn't work, you may have to remove some filter material. Do NOT do this in the tank as the material will float out and go all over the aquarium.

The nine filters I made took an afternoon of work.



My nine filters before adding the filter material.

It will take 10 days to two weeks for the filter material to become coated with nitrifying bacteria. After a year, I did have to rinse the filter to remove some debris. These filters have given me an extra level of comfort for the stocking levels in my breeding tanks.

My thanks to Charley Grimes for the inspiration for this article.

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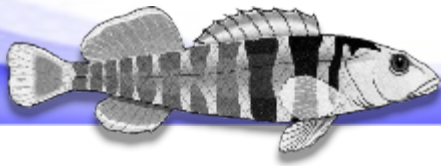
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Jenynsia onca

Spawning the Uncommon One-Sided Livebearer

By Mike Huber



© Imperial Tropicals

JENYNSIA ONCA is a livebearer in the family Anablepidae from South America.

The Anablepidae is a family which lives in brackish and fresh water habitats from southern Mexico to southern South America. It consists of three genera, the *Anableps* or four-eyed fish, the *Jenynsia* or one sided livebearers, and the *Oxyzygonectes* or white eyes.

These species are distributed in the Rio de la Plata basin and Atlantic coastal drainage from Rio Negro Province, Argentina to the city of Rio de Janeiro, Brazil and in the Andean drainage of northwest Argentina and southern Bolivia.

Anableps species are often called one sided livebearers. Earlier it was thought that they only mated on one side, right-handed males with left-handed females and vice-versa. But more recently they have been observed

even turning upside down and backwards to mate with a female as well as other strange ways.

These fish do not have a gonopodium like the livebearers such as guppy, molly and swordtail but are more like the Goodeid family with just 3 rays that make up the sexual reproduction part of the fin. Unlike many livebearers the males and females are the same color but one can mostly tell the females when they become very pregnant.

There are about 16 other species in the Jenynsia genus. In MASI Breeder's Award Program a few people have also spawned *Jenynsia lineata*.

To spawn these fish I put them in a bare bottom tank with a sponge filter where they initially hid behind. I added a few floating plants so the fry would have a place to hide and feel safe and a lid so they would not jump out.

The tank was in a heated room that set to 74 degrees and normally ranged from 68 to 73 F at that place on the rack. They were in very hard well water.

They were observed jumping

when first received and I presumed it was a female who was not ready to spawn leaping from a male. They were fed live, frozen, and flake food everyday. A 30% water change at least once a week or sometimes twice a week depending on how much they may have been overfed with flake food.

The females began to get heavy in this tank setup and when the fry were born they were fairly large for new borns. The parents were not observed paying any attention to the fry and after a couple days the fry were schooling with the parents.

The fry were fed banana and micro worms, newly hatched shrimp and fry food for a couple days then they started eating chopped up black worms and live shrimp.

Other Linked References:

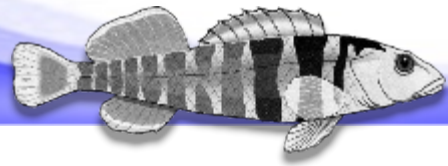
- <http://www.nanfa.org/ac/one-sided-livebearer-jenynsia-lineata.pdf>
- https://www.researchgate.net/publication/269928643_Jenynsia_onca_a_new_anablepid_fish_Teleostei_Cyprinodontiformes_from_southern_Brazil_and_its_phylogenetic_position

To work with new or rare fish like these, join the Missouri Aquarium Society's Breeder Award Program (BAP)



Jenynsia onca original description

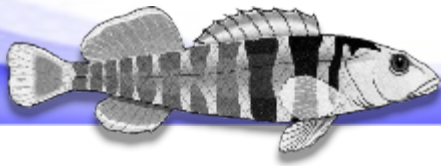




The DARTER

A Roundup of Rainbows from Gary W. Lange





Spawning the Golden pencil fish, *Nannostomus beckfordi*

By Mike Huber

THE GOLDEN PENCIL fish, *Nannostomus beckfordi*, belong to the order Characiformes in the family Lebiasinidae. They are found normally in swamps and slow-moving waters and inhabit sluggish tributaries, small rivers and swampy areas particularly in areas with dense growth of aquatic vegetation or submerged woody structure and leaf litter.

Nannostomus beckfordi are found in Brazil, Guyana, French Guiana and Surinam and are also reported from the Rio Madeira, lower and middle Amazon as far upstream as the lower Rio Negro, and the Rio Orinoco in Venezuela.

Though wild fish are still exported most of the pencil fish sold are now commercially farm raised.

Adult males are more colorful and the females are noticeably more rounded. The anal fin of the male has a curved posterior edge which is straight in the females.

To spawn them I used a 20 long with a sponge filter and very fine gravel with large glacial rock on top. The fine gravel allowed plants to grow in the substrate and the larger rocks allowed the eggs to fall between where



© H-J Chen

the spawning group could not get to them.

I added some Anubias tied to driftwood and floating plants. Plants were so thick the fish would wriggle to get through them. A small opening was left in the front of about 4" with nothing but fine gravel where I could feed the fish and do small gravel vacuuming when changing water.

There were leaves placed throughout the tank that while decaying created a microbe colonies and added tannis to the water while creating a food source for the fry.

Several different methods to spawn and raise egg scattering fish can be used.

Another method I've used is to have four or five tanks set up with the same water conditions, round rocks or marbles in the bottom. Put the spawning group into a tank for 2 or 3 days then move them to the next till you use all the tanks, after which you can put the spawning group back in a holding or conditioning tank and let the fry hatch out and grow in the tanks. This method does keep a lot of tanks tied up.

Using the single tank set up similar to the first outside with a tub and they will usually have bigger spawns because of all the live food. Outside I don't use a filter as the plants create enough oxygen. I have also used a ten gallon tank that sits in my

windowsill with a false bottom, sponge filter and potted plants.

Condition the fish in another tank and when the females are full of eggs move the group to the tank in the window. I put them there in the evening before the lights get turned off. Through the false bottom the next morning you can see if there are eggs on the bottom.

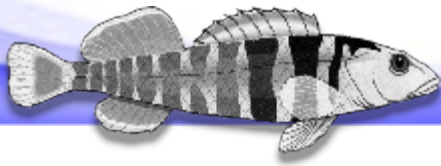
Most of the time I don't feed them because they are only going to be in the tank for 3 or 4 days. But if they are fed, with the false bottom, one can lift up a side to get a small hose in and either vacuum the bottom or suck out the eggs if needed. I normally leave the eggs in the tank and even if some fry hatch they usually won't go through the false bottom.

After spawning I put the parents back into their tank, remove the false bottom, and let the fry grow in that tank for a few weeks.

If there are several different species to spawn, sometimes the eggs can be sucked out every morning and put into a different container next to the tank. After 3 or 4 days remove the parents and eggs and introduce a new set of fish that evening.

Their are several ways to spawn egg scatters. Pick the one that works best for you.





Spawning *Apistogramma* sp. 'Abacaxis'

By Steve Coxon

HAVE ALWAYS LOVED *Apistogramma* dwarf cichlids. As a teenager working in a shop in East Tennessee, I found my first—an unlabeled single female, probably *cacatuoides*, while unpacking a shipment.

I worked in the shop for \$4 an hour not only for the financial support of my hobby, but also to get the first picks from each delivery. Information was more difficult to find then, and I never did identify the fish, but I fell in love watching that Apisto's behavior in my tank as she immediately took up residence under a piece of driftwood and seemed much more intelligent than the other fish I kept.

Over the past few years, with much greater access to information of MASI experts, old books I've accumulated, and the Internet, which also provides ready access to buy pairs



Male



Female w Fry

of Apistos, I've been breeding several species.

For me, nothing in fishkeeping beats watching a female Apisto look after her fry. I like them all, but a standout is *Apistogramma* sp. 'Abacaxis'. I first saw them in Jake Harris' fishroom and obtained a pair from him. Sp. 'Abacaxis' is a standout among Apistos in coloration, particularly their purple lips and throat. It is a very striking fish.

Discovered in 1999 at Lago Glemende in the Rio Abacaxis of Brazil by Horst Link and Mario Wilhelm, another name for the fish is sp. Wilhelmi. Many hobbyists discourage this name as using it as a common name may prevent it from becoming its species name when it is described in the future (Ref: Dwarfcichlid.com). The fish also has the A numbers A227 and A228.

Sp. 'Abacaxis' is found in very soft water with a pH below 4.0 and almost no hardness. Sp. 'Abacaxis' is smaller than other Apistos I've worked with including *cacatuoides*, D37, and *alacrina*. I've spawned each of those in treated St. Louis County tap water, but did not think that would work in this case as all spawning reports I found for 'Abacaxis' had a pH below 7 and a TDS below 100.

To spawn Sp. 'Abacaxis', I used a 10 gallon tank with a thin sand substrate, driftwood, lots of

java moss, alder cones and Indian almond leaves, a 3" clay pot drilled with a step bit, a double sponge filter, and a box filter filled with Fluval peat pellets. I used RO/DI water with just a cup of treated tap and heated and filtered it for several days with a box filter filled with Fluval peat pellets on Mike Hellweg's recommendation. I heat the tank to 79F.

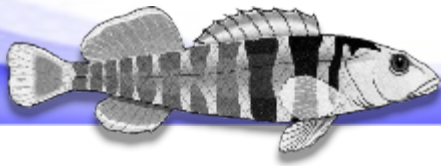
I was never able to obtain a pH below 6.2 but do have a TDS around 60, and that (likely along with live foods including black and grindle worms) was enough. In early October, the male suddenly took to the back of the tank as the female brought her fry out on parade.

The approximately 40 fry, with their mother watching closely, now spend most of their time near the front of their tank where I feed them. I give them baby brine shrimp and microworms daily, but they also happily accept prepared foods such as Sera Micron Nature Fry Food and as they are getting a little larger, Brine Shrimp Direct's KilliFeast (300-500 micron). While the female generally keeps the male away, I observed him step right in to defend the fry when she was scared away by a feeding tube I used to give them microworms at first.

I have a 20 gallon grow out tank waiting for them to move into in a month or so- I wait until the female is done parenting them when possible.

I hope to help make Sp. 'Abacaxis' a more common sight in St. Louis area fish rooms!





Minifins

How to Tell the Boys from the Girls

By Mike Hellweg, CFN
(Certifiable Fish Nut)



IT MAY SEEM obvious, or even silly, but it bears reminding – if you want to breed fish both a male and a female are needed.

I don't know how many times I've heard folks complaining about having trouble getting a fish to spawn, only to find out that they only have fish of one sex! Folks in the business of selling fish don't always know, either, so a newer hobbyist can't be faulted.

If you want to be a successful breeder, it is a good idea to start learning how to determine sex in your fish. With many species it is pretty easy, but sometimes it can be a challenge even for folks who have been breeding fish for decades.

This has happened over and over again over the decades, even with some very popular fish. It may be surprising, but for many folks, even breeders, except for breeding season it is still difficult to sex common fish like angels, discus, and goldfish. In many other fish, where fry care is shared equally or is non-existent, sexes can be challenging or nearly impossible to distinguish. So do a bit of research, and don't be afraid to use a book.

A lot of information about keeping and breeding fish isn't on the Internet, and many things you find on the Internet are just regurgitated from other Internet sources – and all of it is limited by the original source. Book information is not only the author's opinion, but books are also edited, discussed and argued about by the author and sometimes as many as 7 editors (*I'm speaking from personal experience here!*) so there is a much better chance that the information found in a book is correct, even if some of the scientific names are out-of-date.

A classic mixup example occurred about 20-some years ago at a major convention- one of the vendors was selling an awesomely colored "new" bright red *Badis* species. He had a tank full of them, brightly colored males and some less colorful fish he believed were females. The fish were a bit too pricey for me at the time. Turns out that was a good thing as no one who bought them had any luck getting them to spawn. When females finally showed up in the trade a couple years later, it became obvious why. He was selling dominant fish as males and less dominant fish as females, but they were still males!

There was nothing nefarious here. Noone knew any better. Females actually are much smaller and look nothing like the males, so collectors were removing them from the fish they shipped to their wholesale customers. No one wanted to sell those "ugly" gray fish! Of course, I'm talking about the Scarlet Badis, *Dario dario*, and while males are bright, stunningly red striped fish, with bright red fins, females are plain silvery gray fish with clear fins. To this day, some dealers still try to sell less-dominant males, with very pale red colors and lightly tinted fins, as females. But get one of these "females" in a tank where they are the only fish, or the dominant fish, and suddenly they color up! Females are still plain silvery gray with clear fins. If there is red in the fins, it's a male!

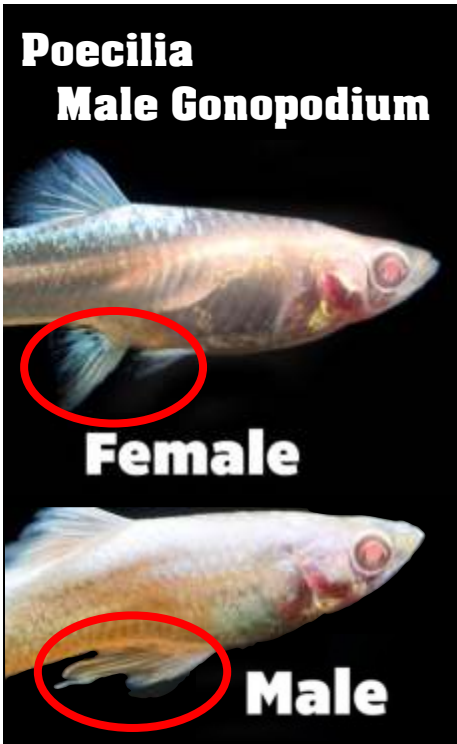
So how do you tell the boys from the girls and avoid problems like this? First off, sit in front of the tank and watch your fish. Behavior is often your first clue as to the sex of your fish. Even when young, male fish are often more outgoing, sparring with one another, chasing each other, and generally spending more time out in the open. One sex or the other at a given age is generally larger than the other. Secondary sexual characteristics



often begin to appear when fish are only a couple months old. Usually, sex based fin development and coloration begins to appear at that time, too.

Don't be disappointed if it appears you have all fish of one sex. Often, fish don't start to reach sexual maturity until they are over a year old. For example, if you get a dozen young *Montezuma swordtails*, don't be surprised if they all look like females until they're nearly full grown and about 12 – 14 months old. Then, almost overnight, you'll suddenly see a male or two "pop". If you miss watching the tank for a few days, you might be forgiven for thinking someone added a couple males while you were away!

Livebearer males are generally smaller than females – often half the size or even less! Male livebearers are generally more colorful, and in some species, males may have enlarged fins or extended fin rays such as in sailfin mollies or swordtails. In male *Poeciliid* livebearers the anal fin is modified into a tube shaped intromittent organ called a gonopodium. The male inserts the gonopodium into the genital pore of the female and deposits sperm packets that will later fertilize her eggs when she ovulates. In some species, the male does a dance in front of the female and releases pheromones into the water that cause her to ovulate, ensuring his sperm gets to ripe eggs.



Other livebearer families are a bit different. In *Goodeids*, the males are also smaller and more colorful than the females, but they don't have a gonopodium. Instead, their anal fin is called an andropodium and is used to clasp that of the female and the male inserts a soft pseudo-penis into her genital pore. To facilitate the insertion of the pseudo-penis while holding her anal fin with his, the first few rays of the male's anal fin are shorter, looking like it has a notch in it. Male halfbeaks also have an andropodium that they use in a similar way, but instead of a notch, the center rays of their anal fin are elongated, serving a similar purpose.



Goodeid Andropodium

Most fish are egg layers. Some scatter their eggs randomly, expecting current to disperse them. Others scatter their eggs over cover like plants, piles of rocks, or similar debris and hope some will find their way into a safe nook until they hatch. Yet others carefully place their eggs on surfaces or in crevices. Some parents will carefully guard the eggs and fry in a nest, while others leave them to their fate.

In some species, the males take up the eggs in their mouth. In others, the female does this. And in yet others, the parents pass the eggs or fry back and forth from one's mouth to the others! Every species is just a bit different! That's one of the great things about working with fish. With over 14000 freshwater species and more than 35000 total species, there is always something new and different!

In the egg layers, males are generally smaller and more colorful than the females. Males of many species will first chase one another, sometimes doing a frenzied dance, sparring with one another, flashing

colors that aren't normally seen, and flexing their bodies to form pressure waves against each other's lateral lines to see who is the most fit.

Young males, even though they have no hope of spawning, may start to participate in this frenzy even when they are too young to mate and this may be the first cue that they are, in fact, males. This frenzy is similar to seeing two male deer locking antlers during the rut, and it may help to get the male's "blood up", getting mating hormones going in the male's body that he will need for spawning after the frenzy. It may involve just a couple males, or an entire group. Most of us have seen a huge group of male cories all chasing each other in this manner at the beginning of spawning.

It may be a surprise to know that like birds, not only do male fish dance to challenge rivals and impress potential mates, but many male fish will also "sing" to threaten rivals, claim territories, or to attract or impress potential mates by making sounds during this mating frenzy or actual courting. Chirps, grunts, squeaks, and clicking sounds are all common. These sounds are made with teeth, jaws, mouths, throat teeth, and even specialized fin joint or bone structures that may be tied to the swim bladder to amplify this sound. Some sounds are so loud, they can be heard from long distances, even out of the water! In our aquaria, fish like croaking gouramis and talking catfish can easily be heard across the room.

In species where the males are larger than the females, the males generally defend a territory and sometimes a harem from other males. Some males will build and defend nests or similar structures like



leks or arenas. This may last only through spawning, after which the males may leave the eggs/fry to their fate, or they might guard the eggs/fry until they've hatched and the fry are fairly large.

Many male cichlids defend territories and males tend to be more colorful, larger, and sometimes have ray extensions on their unpaired fins. They sometimes have more impressive mouths or jaws that they use for fighting. Sometimes the male guards a territory and individual smaller females guard individual caves within the male's territory. These males can be easily two to three times the female's size, or more.

In some species one or the other parent will hold the eggs or even the fry in their mouth after they hatch. Generally, the holding sex in these

species (females in many cichlids, males in many Bettas, females or males in some gouramis) will have an enlarged head or throat. Sometimes this is a more colorful area, especially when the parent is holding. In many other Anabantoids the males are more colorful and more aggressively defend their territories at or near the surface where they will build a nest of mucus-covered bubbles. In addition to brighter colors, these males may also have fin ray extensions.

Mouthbrooding male Bettas develop a larger mouth that appears more "U" shaped from above, whereas the females from the same angle have a more "V" shaped profile. This can be seen when the fish are only a month to six weeks old, and is the first secondary sex characteristic to develop in these fish.

There's always one oddity...



A fish with only one apparent sex is *Kryptolebias marmoratus*, a species of killifish native to Florida, some of the Caribbean islands and coastal areas of Central America. In most populations of this species all individuals appear as females but are actually self-fertile hermaphrodites so

only one fish is needed to have a breeding group!

Each individual fish has BOTH male and female sex organs and can fertilize their own eggs internally, allowing them to lay fertile eggs without another fish present.

Occasionally, and especially with populations in the southern end of their range, fully functioning colorful males will appear. This can allow the population to remix genetic diversity occasionally. Otherwise, there would be no mixing of genes as a single individual fish would be both mother and father!

As a further example of the strangeness of this species, for many years they were considered to be very rare and endangered. Now they are known to be fairly common. Scientists realized that they spend a lot of time OUT of the water and had been looking for them in the wrong places. They are actually more commonly found hiding in crab or crayfish burrows, hollow logs or damp grassy fields - often some distance or many yards from the water, and even sticking to leaves in TREES! Who would have thought to look for fish in TREES?

Aren't fish amazing? Which reminds me - don't forget to sit in front of the tank and spend time just watching them!



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Missouri Native Plants
for Aquaculture

Ludwigia alternifolia

Marsh seedbox,
rattlebox, bushy
seed box

By Micah Issitt &
Adrienne Legault



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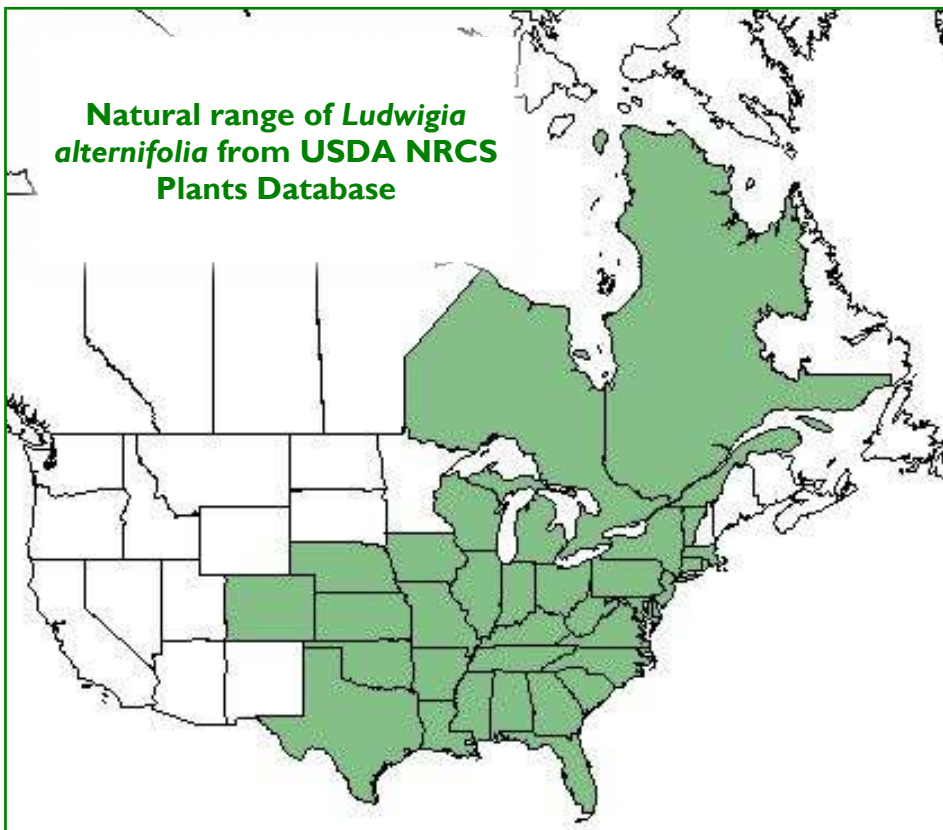
LUDWIGIA ALTERNIFOLIA, ALSO known locally as “seedbox,” is a very unusual member of the

familiar semi-aquatic genus *Ludwigia*. The species blooms typically blooms in the mid- to late-summer and, in the fall,

produces one of the most unusual seed-bearing structures, providing visual and auditory interest in a winter garden left wild.

The genus *Ludwigia* is but one branch of the massive plant family **Onagraceae**, commonly known as the “willowherbs” or the “primroses.” This large group of flowering herbaceous plants, shrubs, and trees (650 species in total), is found on every continent and is one of the most important plant families for North American insects. For gardeners of the aquatic or terrestrial bent, the Onagraceae is an essential group of plants to get to know.

Onagraceae has two subfamilies, the first of which is Onagroideae, typically called the “evening primroses” or “sundrops.” While there are many types of native Missouri plants in this group, one of the best to know about is *Oenothera macrocarpa*, the Missouri evening primrose. The large yellow flowers of this sprawling dry soil plant open in the evening and keep blooming into the night and the plant therefore



attracts a whole fauna that might not otherwise visit the garden. This includes the absolutely wonderful sphinx and hawk moths (family Sphingidae), which are large nectar-guzzling creatures famous because some of the diurnal ones mimic hummingbirds.



White Lined Hawkmoth

The other subfamily of the Onagraceae is the Ludwigioideae, which contains only a single genus, *Ludwigia*. These plants, commonly known as “water primroses” or “water purslanes,” are widespread through North, Central, and South America.

If there is one group of people who don't need to be convinced about the value of Ludwigias it is the aquatic gardeners. Pretty much every aquarist who has ever experimented with planted tanks will be familiar with the genus. *Ludwigia repens*, sometimes called the “purple” or “red-leaved *Ludwigia*,” is an extremely popular aquarium plant and, as many area aquarists might not know, a Missouri native as well. The species' presence in the state was actually first documented by Peter Raven, a legend in the botanical field who discovered his first new species at age 14 and went on to become the Director of the Missouri Botanical Garden.

Missouri is actually a pretty great place for aficionados of the Ludwigias to hang out because the state boasts eleven native species. Cultivars and tropical varieties tend to be more common in the general aquarium trade, but the wild varieties that appear in the state are every bit as interesting and useful in both water gardens and aquaria.

One of the most common native members of the group is *Ludwigia peploides*, otherwise known as the “water primrose.” This wonderful plant should be in every water gardener's repertoire, providing

beautiful yellow flowers, in abundance, and forming a network of submerged and emergent growth that creates rich and varied environments for aquatic creatures.

The species in focus here, *Ludwigia alternifolia*, is quite different than the more familiar *L. repens* or *L. Palustris*. *Ludwigia alternifolia* tends to struggle when fully submerged and prefers to grow either in the margins of an aquatic environment, or in moist, boggy soil.

We grow *L. alternifolia* on shallow shelves so that the growing tips remain outside the water, but the roots are submerged. We tend to use a very rich organic soil with plenty of ground up fresh plant matter and banana added to garden clay or loam. We top our pots with a sand cap to prevent loss of the soil. We start *L. alternifolia* on a shallow shelf, but once the plant gets going, the pot can sit as low as 6-8 inches under the surface. Just make sure that there are growing tips extending above the surface.

By late summer, *L. alternifolia* will typically have become quite bushy, growing up to 3 ft tall. The leaves, which appear on short stalks from the main stem, are dark green and lanceolate (lance shaped).

I have found that when used as an emergent plant, *L. alternifolia* will also put out stems that float along the water's surface and provide excellent cover for fry. On the surface of the pot, *L. alternifolia* tends to throw up a bunch of air roots, which look like the heads of little red worms poking out of the soil.

Most of our ponds are dedicated to Medaka ricefish (*Oryzias latipes*) and the fry produced by this species tend to gather around air roots, darting through them like a miniature version of a mangrove forest.

One way I've used *L. alternifolia* is to situate the plant at the edge of the pond or tub, and then to use *L. repens* a little deeper in the same tub. I find that this more aquatic *Ludwigia* creates the necessary underwater cover for fry of species that like to gather at the bottom during their first few

What's in a Name?

There is an interesting story about how the genus *Ludwigia* got its name. Swedish botanist Carl Linnaeus, who is known as the father of botanical taxonomy, introduced a system of classifying organisms that he called the “sexual system” in his 1735 masterwork “**Systema naturae**”.

The Linnaean system is now treated as the standard for classifying organisms but at the time he created it, many prominent botanists were opposed to the system. Some objected because they felt it was immoral to use plant sexual bit for classification and feared that this might become a practice among zoologists as well. Even, heaven forfend, in classifying humanity. Oh, the immorality!!

Others objected, like Leipzig botanist and physician Christian Gottlieb Ludwig (1709-1773), because the Linnaean system upended the traditional botanical system that Ludwig and his mates had spent so

long developing. Linnaeus was what is often now called a “disruptor,” a progressive willing to throw out the old to come up with an entirely different system. As always happens when a progressive professional comes along, traditionalist conservatives are resistant and rally around the status quo. Ludwig and those of a similar ilk felt that Linnaeus was stepping on their toes.

Linnaeus also had a habit of naming new genera and species after his rivals and when he reclassified the Onagraceae according to his new system, he named the genus *Ludwigia* after Christian Ludwig. There is some evidence to suggest that Ludwig was not entirely impressed with having the genus, a group of marsh-loving, mud weeds, named after him. That being said, Ludwig is pretty much only remembered because of the genus *Ludwigia* and there is certainly no shame in having one's name associated with such a lovely, successful, and ecologically important group of plants.

By Micah Issitt



weeks, like many fish in the genus *Xiphophorus*.

It is possible, though difficult, to get the growing conditions just right for *L. repens* to emerge and flower at the same time that *L. alternifolia* is flowering and this cascade of small yellow flowers is a lovely sight.

Another interesting thing about the entire Onagraceae family is that many species are oligolectic, meaning that only a single species or a couple closely related species of pollinators can service the flowers. This makes growing and spreading native Onagracids all the more important for native gardeners, helping to provide oases for some of our rarer insect species. This is not true of *L. alternifolia*, which attracts a much larger group of pollinators to its flowers, but it is one of the reasons that my wife and I have focused on species from this family and grow over 20 different varieties in our gardens.

L. alternifolia has small, yellow flowers and these tend to attract bees in the family Halictidae, often called the “sweat bees,” and bees in the genus Megachile, sometimes called “leaf-cutter” bees. The Halictidae, a family with hundreds of species, come in great numbers to our urban yards and there are many different types, including the stunningly beautiful Agapostemon, descriptively known as the “metallic green” sweat bees. Halictid bees sometimes land on sweaty humans to lap up the salty excretions from the skin. They can sting if swatted, but are otherwise harmless. If possible, the bees should be left alone as they provide innumerable benefits to our



ecosystems and are food for many birds in addition to pollinating a large number of small flowers.

Flowering occurs in the summer, usually around June, but may occur as late as mid-July, depending on the weather. Like all Onagraceae, the plant’s flowers have four petals and four sepals. The yellow petals fall off quickly, typically within a day or two of opening. The less colorful sepals are all that is left behind and so the flowers quickly take on a faded, underwhelming appearance.

By far the best thing about keeping *L. alternifolia* is what happens after flowering. From each flower site, a cube-shaped fruit develops. These little capsules are a little over half a centimeter long and they turn rusty brown as they harden. Each capsule has a small hole at the top (called an apical pore) and holds a number of tiny seeds within. The seeds aren’t released for some time after the capsules form and for weeks the dried capsules and seeds remain affixed to the plant.

When the wind blows, the seeds contained within these little cubes rattle around against the dried husk of the capsule. It is a very unusual but pleasing sound that adds a little magic to a windy fall day around the rapidly aestivating water garden. This sound, and the strange look of the dried cubes on the plant, are why this is one of my favorite plants for the fall and winter water garden, adding a little bit of strange interest to an otherwise bleak landscape. In addition, the seed heads are a big hit with seed-hunting birds and deer mice and we’ve seen both being what can only rationally be described as “extremely cute” as they land on, or ascend the stalks to get at the seeds.

Over the years, these strange seed pods have helped *L. alternifolia* to find a place in local legend and lore as it is said that gnomes and faeries use the little square capsules as instruments. I have never seen this occur, though it may simply be the case that most of the faeries in our gardens are not musically inclined. In any case, Missouri gardeners and outdoor fish keepers looking to try something different should certainly give *L. alternifolia* a look.

If you do see faeries clipping the capsules or using them to play a little jig, please send pics!



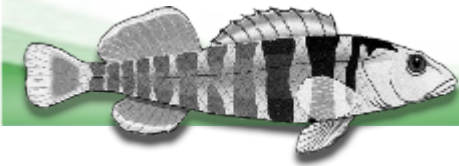
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What's in a Name?

By Micah Issitt

THE NATIVE MISSOURI water plant *Pontederia cordata*, reviewed last Darter issue, provides a prime example of species naming and how poorly chosen “common names” can cause repeated confusion, sometimes lasting for centuries.

Pontederia cordata is often sold as “Purple Pickerel RUSH,” even though the plant is not closely related to the large group of primarily wetland, grass-like perennials from the family *Juncaceae*, which are more correctly called “rushes.” The problem of confusing or misleading common names is one that is familiar to fishkeepers, as many fish were named in ways that seem to associate them with groups to which they do not belong.

An ancient Chinese expression attributed to Kong Fu-zi, or Confucious, who was not a single person but an amalgamation of many noted philosophers, holds that wisdom begins with the ability to call things by their right names. The early naturalists agreed and felt that it was important to assign each organism a clear and unambiguous name that indicated the species’ relationship to other species.

Lacking experience and detailed anatomical knowledge, naturalists often assumed relationships that later proved incorrect. Someone in the distant past associated *P. cordata* with rushes that grew in the same environment and in the same basic conditions. They began to call this plant a rush, even though it was not the

same kind of plant and it is still often known by this mistaken description.

The modern science of taxonomy is typically said to have begun with the publication of Swedish scientist Carl Linnaeus’s famous treatise on plant biology, *Systema Naturae*, which was first published in 1735. While this might seem a long time ago, it was quite recent in the broad span of human history. By this time, humans had already been naming plants and animals for thousands of years.

Linnaeus’s new system for organizing plants and animals into orders, families, genera, and species, etc., changed the language used to describe organisms and established a new and far more accurate way to reflect the relationships between species.

Many species are known often by dozens of different common names, some specific to the various little towns or regions in which the species appears. So, a species of fish, for instance, like the North American species *Esox niger*, might be known as a “grass pike” in one area, while fisherpeople in another town might call it a “jack fish.” Linnaeus’s scientific naming method was meant to cut through this confusion and to assign each species a single, scientifically determined name.

Of course, the taxonomic system isn’t perfect. Many plants and animals were mistakenly assigned to the wrong groups in the years that followed. However, because taxonomy is a science, it is self-correcting. New research supplants older thinking and the network of taxonomic relationships is gradually refined.

It is a great benefit to aquaculture AND horticulture that the scientific names of fish and plants are now more commonly used. I am especially pleased when strains of fish or cultivars of plants are tagged with even deeper levels of specificity, such as subspecies, varietals, or location data. This can be a great benefit on the practical level and also adds an extra layer of nerdy goodness to both of these hobbies.

The point of this taxonomic rant is that *Pontederia cordata* is not a rush, despite being called one. Fortunately, *Pontederia cordata* also has the more accurate common name, “pickerelweed,” which is derived from the fact that this plant both grows “like a weed” and often occurs in habitat utilized by the freshwater fish known as *Esox niger* (chain pickerel) and *Esox americanus* (American pickerel). The word “pickerel” emerged in the 13th century and is a diminutive of “pike,” the common name for a widespread group of freshwater fish in the *Esocidae* family. Pickerel essentially means “little pike” or “baby pike” and this is fitting when discussing “pickerelweed,” because the plant creates excellent cover and a prime “nursery habitat” for the fry of these and many other species.

***Pontederia* is one of many genera of plants and animals what was actually named by Carl Linnaeus himself.** He named the genus in honor of a then-prominent Italian botanist named Giulio Pontedera (1688-1757). Actually Pontedera was one of Linnaeus’s most passionate critics and spent years arguing against Linnaeus’ approach to plant classification, known as the “sexual system”, which classifies a plant by sorting key sexual characters, such as the number and arrangement of stamens and pistils in the flowers.

Pontedera, then a professor of Botany at Padua University and one of the most influential scientists in Italy, said, “This new system is crappy.” But, as it turned out, Pontedera and his allies didn’t have any better ideas and Linnaeus eventually won out over his critics. There is a long correspondence between Linnaeus and Pontedera, filled with passive-aggressive verbiage, in which the two discussed Linnaeus’ system while Pontedera demonstrated the depth of his jealousy at not having been the one to come up with it.

In what is either a gracious gesture or a bit of a barb, Linnaeus named the genus *Pontederia* in honor of his “frenemy”.



2021 BREEDER'S AWARD PROGRAM - Steve Edie

BAP: July 2021



Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
Mike Huber	<i>Carassius</i>	<i>auratus</i>	Comet Goldfish	15			3769
	<i>Cyprinus</i>	<i>rubrofasciatus</i> *	Koi	15	5		3789
	<i>Oryzias</i>	<i>latipes</i>	Rice Fish	5			3794
Holly Paoni & Kevin Wise	<i>Ameca</i>	<i>splendens</i> #@		0		10	1142
	<i>Xenotoca</i>	<i>doadrioi</i> @		10		10	1162
	<i>Xenotoca</i>	<i>lyonsi</i> #@		0		10	1172
Caleb Pitman	<i>Ameca</i>	<i>splendens</i> #@	Butterfly Splitfin	0		10	557
	<i>Amitatlania</i>	<i>nigrofasciata</i>	Pink Convict	5			562
	<i>Xiphophorus</i>	<i>montezumae</i> "Rio Tamasopa"		5			567
Mitchel Wendel	<i>Hyphessobrycon</i>	<i>anisitsi</i>	Buenos Aires Tetra	15			105
	<i>Pelvicachromis</i>	<i>pulcher</i>	Krib	10			115
	<i>Poecilia</i>	<i>reticulata</i>	Red Dragon Guppy	5			120
	<i>Poecilia</i>	<i>salvatoris</i>	Liberty Molly	5			125
	<i>Pterophyllum</i>	<i>scalare</i>	Koi Angelfish	10			135
	<i>Xiphophorus</i>	sp. "Domestic Platy"	Mickey Mouse Platy	5			140
	<i>Xiphophorus</i>	<i>multilineatus</i> "Rio Huchihuayan" *	Pygmy Swordtail	10	5		155

BAP Key:

- * = First MASI species spawn (5 point bonus)
- ** = First MASI species and genus spawn (10 point bonus)
- *** = First MASI species, genus and family spawn (15 point bonus)

- @ = C.A.R.E.S Species at Risk (Double base points)
- # = Species previously submitted = 0 points, except for C.A.R.E.S. base point bonus
- ^ = Species previously submitted, limited points for additional color varieties

Sources:

Cal Academy <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>

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BAP: August 2021

Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
Julia Cross	<i>Limia</i>	<i>melanogaster</i>	Black Belly Limia	5			15
Mike Huber	<i>Betta</i>	<i>rubra</i>		15			3809
	<i>Jenynsia</i>	<i>onca</i>	Left Sided Livebearer	20			3829
	<i>Pimephales</i>	<i>promelas</i>	Rosey Red Fathead Minnow	5			3834
	<i>Pyxichromis</i>	<i>orthostoma</i> "Lake Nawampsa" #@		0		10	3844
	<i>Xiphophorus</i>	<i>birchmanni</i>		10			3854
	<i>Xiphophorus</i>	sp. "Domestic Swordtail" ^	Japanese Swordtail	0	1		3855
	<i>Xiphophorus</i>	sp. "Domestic Variatus"	Hi-Fin Variatus	5			3860
	"Xystichromis"	sp. "Kyoga Flameback" #@		0		10	3870
Caleb Pitman	<i>Fundulopanchax</i>	<i>gardneri</i>	Steel Blue Killifish	15			582
	<i>Labeotropheus</i>	<i>fulleborni</i>		10			592
Curtis Skouby	<i>Corydoras</i>	sp. "CW008"		10			280
	<i>Hemichromis</i>	<i>exsul</i>	Turkana Jewel Cichlid	10			290

BAP: September 2021

Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
Julia Cross	<i>Pelvicachromis</i>	<i>pulcher</i>	Krib	10			25
Caleb Pitman	<i>Chilatherina</i>	<i>fasciata</i> "Faowi Village" *		10	5		607
	<i>Heterandria</i>	<i>formosa</i>	Least Killifish	5			612
	<i>Melanotaenia</i>	sp. "Running River" *	Running River Rainbow	10	5		627
	<i>Pseudotropheus</i>	<i>lucerna</i>		10			637
	<i>Xenotoca</i>	<i>lyonsi</i> "Rio Tamazula" @		10		10	657
	<i>Xiphophorus</i>	sp. "Domestic Variatus"	Sunset Hi-Fin Variatus	5			662

BAP Key:

* = First MASI species spawn (5 point bonus)

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

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

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

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

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

Sources:

Cal Academy <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>

CARES <http://caresforfish.org/>



BAP: October 2021

Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
Mike Huber	<i>Hemichromis</i>	<i>exsul</i>	Turkana Jewel Cichlid	10			3880
	<i>Tanichthys</i>	<i>albonubes</i>	Gold White Cloud	5			3885
	" <i>Xystichromis</i> "	sp. "Kyoga Flameback" #		0			3885
Holly Paoni & Kevin Wise	<i>Carassius</i>	<i>auratus</i>	Goldfish	15			1187
	<i>Hyphessobrycon</i>	<i>anisitsi</i>	Buenos Aires Tetra	15			1202
Caleb Pitman	<i>Limia</i>	<i>perugiae</i> "Boca de Cachon"		5			667
	<i>Rhadinocentrus</i>	<i>ornatus</i> "Teewah Creek" * @		10	5	10	692
	<i>Xiphophorus</i>	sp. "Guatemala"	Guatamalan Speckled Swordtail	5			697
	" <i>Xystichromis</i> "	sp. "Kyoga Flameback" @		10		10	717
Dave Short	<i>Ancistrus</i>	<i>cirrhosus</i> "Super Red"	Super Red Bristlenose	10			10

MASI BAP Chair WARNING:

Amatitlania nigrofasciata **NOT** *Herotilapia multispinosa*

These very prolific Pink Convict Cichlids are circulating under the name "Golden Rainbow Cichlid". Please note the correct species and re-label your tanks!!

Thanks!

Steve Edie



HORTICULTURE AWARD PROGRAM - Mike Hellweg September & October 2021



Member	Genus & Species	Common Name	Type	Points
Holly Paoni & Kevin Wise	2195 Points			
	<i>Canna indica</i>	Orange Flash Canna	V	10
	<i>Canna indica</i>	Red Flash Canna	V	10
	<i>Cryptocoryne affinis haerteliana</i>		V	15
Julia Cross	45 Points			
	<i>Vallisneria americana tortissima</i>	Corkscrew Val	V	5
Mike Huber	755 points			
	<i>Hydrocotyle tripartita</i> Japan		V	10
	<i>Hygrophila pinnatifida</i>	Feather Leaf Hygro	V	20
	<i>Phyllanthus fluitans</i>	Red Root Floater	V	5
	<i>Rotala rotundifolia</i>		V	15



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



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The Missouri Aquarium Society

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AquaWorld, Manchester	Ellisville, MO	(636) 391-0100
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
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Date Group Club Hopping - 2021 Events

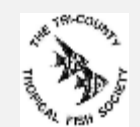
11/18/2021	OCA	11/19-21 OCA Extravaganza - Strongsville, OH
12/5/2021	QCFS	Quad Cities Fish Swap - Davenport, IA
12/12/2021	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
12/16/2021	MASI	MASI-Christmas Party St Louis, MO

Date Group 2022 Events

1/9/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
1/15/2022	CAFE	Winter Auction - Urbana, IL
1/23/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
2/6/2022	MASI	Winter Auction - St Louis, MO
3/6/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
3/6/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
3/2022 TBD	TCTFC	Spring Swap Meet - Peoria, IL
4/24/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
4/24/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
4/30/2022	MASI	Spring SWAP - St Louis, MO
5/1/2022	MASI	Spring Auction - St Louis, MO
7/27/2022	LTFC	7/27-31, Aquatic Triple Crown - Louisville, KY
8/7/2022	MASI	Summer Auction - St Louis, MO
9/18/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
9/25/2022	MASI	Fall SWAP - St Louis, MO
9/30/2022	AGA	9/30-10/2 AGA Natl Convention - Chicago, IL
10/7/2022	AACC	10/7-9 AACC Catfish Convention Herndon, VA
10/9/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
10/30/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
11/6/2022	MASI	Fall Auction - St Louis, MO
12/4/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
12/4/2022	QCFS	Quad Cities Fish Swap - Davenport, IA

Shaded Lines are Local Events

Nearby Clubs linked to their logo



Logos Hotlinked!

Other links on MASI's

[Linkpage.](#)

Continue checking before driving long distances!!



Aquatic Triple Crown Convention Louisville, Kentucky



Hosted by:
American Killifish Association (AKA)
American Cichlid Association (ACA)
American Livebearers Association (ALA)
Australia New Guinea Fishes Assn-NA (ANGFA-NA)

2022

Wednesday, July 27 through Sunday July 31

Schedule

- **Where: Marriott East, Louisville, Kentucky**

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Amenities: Pool, Bar, Restaurants, Fitness Area, and free parking

- **What: Convention, Show, Speakers, Manufacturer Trade Show, Swap Meet, Side Trips, BBQ, Raffles and Huge Auctions.**

Registration for the Triple Crown is \$65.00 for the entire convention. This allows you access to:

The AKA/ACA/ALA/ANGFA-NA Conventions. You can attend any organizations speakers/activities for the registration fee.

Manufacturer Trade Show

Special Raffles/Silent Auctions

Hospitality events

Banquet registration is \$55.00 which includes BBQ, Spencer Jack presentation and live Band.

Tours/Activities:

- **Kentucky Derby Museum - \$35.00**

- Thursday, July 28th, 8am- 12pm
- Take a 30 minute, guided walking tour of historic Churchill Downs Racetrack. Learn about past Derby winners and the rich history of this historic location. Visitors will walk through the property to the paddock and out to the grandstand learning trivia and fun facts along the way. Bring your camera!

- **Tour of Rusty's Fishhouse/BBQR - \$55.00**

- Come Wednesday OR Thursday OR Both! Just be sure to buy a ticket for each night you are attending.
- Cost includes food, beverages, and transportation. Also, there will be a small auction of rare fishes!
- Menu for Rusty's both Wednesday and Thursday
- Provided by Shack-n-the-Back
- Chicken, Pork, Turkey Ribs, Potato Salad, Green beans, Baked Beans, Buns, Peanut Butter Pie, Ice Tea, and Lemonade.

- **Buffalo Trace Distillery Tour - \$35.00**

- Friday, July 29th, 8am-12pm
- For over 200 years, Buffalo Trace Distillery has been defined by a dedication to one craft: making fine bourbon whisky. By honoring tradition and embracing change, Buffalo Trace Distillery has earned its place of leadership among the legendary spirit makers of the world.

Wednesday, July 27:

- 8am-5pm - Show Room & Rental Room & Vendor Setup
- 3pm-5pm - BABES silent auction tables
- 6pm-10pm - Rusty Fish House Tour & Barbeque

Thursday, July 28:

- 8am-5pm - Show & Rental Room & Vendor Setup
- 8am-12pm - Kentucky Derby Museum Tour
- 9am-5pm - Show Room and Vendors
- 9am-5pm - BABES silent auction table
- 4pm-5:30pm - Dry Goods Auction
- 6pm-10pm - Rusty Fish House Tour & Barbeque
- 8pm-Midnight - Hospitality suite Open

Friday, July 29:

- 8am-12pm - Bourbon Tour
- 9am-5pm - Show & Rental Room & Vendor Open
- 9am-5pm - Registrations Open
- 9am-5pm - BABES Silent auction tables

- **6pm-11pm - ACA, AKA, ALA & ANGFA-NA Concurrent Programs**

Saturday, July 30:

- **7:30am-6:30pm - ACA, AKA, ALA & ANGFA-NA Concurrent Programs**

- 2pm-4pm - Huge all species SWAP Meet - Tables \$25
- 6:30pm-7:30pm - Reception Bar
- **7:30pm-8:30pm - Combined Banquet (ACA, AKA, ALA & ANGFA-NA)**
- 8:30pm-9:30pm - Spencer Jack (Fish Keeping Gone Wild!)
- 9:30pm-Midnight - Hospitality suite open & Fish/Vendor room open
- 10pm-? - Live music (Dorney N Firned)

Sunday, July 31:

- 7:30am-9/11am - Auction Registration
- 9am-?? Killifish & Rainbowfish Auction
- 11am-?? Cichlid, Livebearer Auctions

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- **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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	OTO double strength Chlorine/Chloramine test kits - 4 ounce	\$12.50	charles@inkmkr.com
	Flubendazole, 10% powder 25 grams	\$20.00	
	Lavamisole HCl Powder - 5 grams treats 100 gallons	\$10.00	
	Methylene Blue 5% solution (4 ounces)	\$12.75	
	Acriflavine Concentrate (4%) solution, 2 ounces	\$12.70	
	Bromthymol Blue pH test solution, 4 ounces	\$7.00	
Mike Hellweg MiniFins	General Aquarium Support: Dechlor, Coconut Caves, Flake Foods, Plants & Custom Fish Orders Contact by email or buy at the back of the room at MASI General meetings	Contact for Pricing	Email: Mike@Minifins.com



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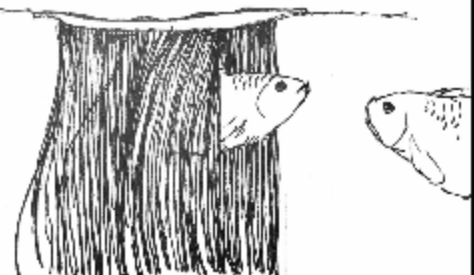
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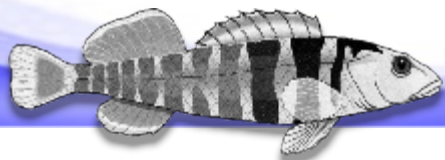
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