

The

DARTER

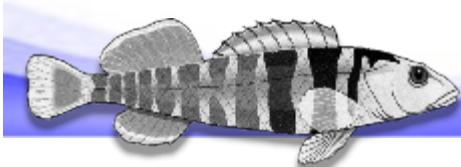
Over 200

Members!

V47#1



January/February 2021



The DARTER

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MEMBERSHIP

[join MASi](#)



Annual membership in the Missouri Aquarium Society, Inc. is \$15 and includes an electronic subscription to The Darter. B&W printed Darter's are available at the meetings for Members: \$5; Non-members: \$7. 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 the membership chair.

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

THE DARTER

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

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

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MASi will exchange THE DARTER with other aquarium societies.

Failure to receive three consecutive issues of a society's publication may be considered as a termination of our exchange, unless advised to the contrary. Send electronic versions to Editor@missouriaquariumsociety.com & Exchange@missouriaquariumsociety.com



Cover - *Aistogramma sp.* "abacaxis" - Steve Coxon



INSIDE THIS ISSUE



<u>From the President's Tank</u>	<u>Pat Tosie</u>	<u>4</u>
<u>From the Editor</u>	<u>Chuck Bremer</u>	<u>4</u>
<u>MASI Exceeds 200 members</u>	<u>Ed Millinger</u>	<u>5</u>
<u>January Webinar - Heather Burke</u>	<u>Gary Lange</u>	<u>7</u>
<u>February Webinar - Mike Hellweg</u>	<u>Gary Lange</u>	<u>8</u>
<u>March Webinar - Joe Faszl</u>	<u>Gary Lange</u>	<u>9</u>
<u>Other Regional Webinars</u>	<u>Exchange</u>	<u>10</u>
<u>Executive Council Minutes</u>	<u>Angela Hellweg</u>	<u>11</u>
<u>MASI Library Report</u>	<u>Mike Huber</u>	<u>13</u>
<u>Auction Message</u>	<u>Mike Hellweg</u>	<u>15</u>
<u>Challenge Update</u>	<u>Jack Heller</u>	<u>16</u>
<u>Virtual Bowl Show</u>	<u>Chirs Mohrle & Holly Paoni</u>	<u>17</u>
<u>My Outdoor Paradise</u>	<u>Chuck Bell</u>	<u>23</u>
<u>Sharing the Aquarium Hobby with Children</u>	<u>Steve Coxon</u>	<u>24</u>
<u>The Celestial Pearl Danio - <i>Danio (Celestichthys) margaritatus</i></u>	<u>Mike Hellweg</u>	<u>26</u>
<u>Taming Godzilla - <i>Ottelia ulvifolia</i> - Flowers & Seed</u>	<u>Gary Lange</u>	<u>29</u>
<u>Water Hyacinth <i>Eichhornia crassipes</i> from Seed</u>	<u>Gary Lange</u>	<u>31</u>
<u><i>Pogostemon stellatus</i></u>	<u>Gary Lange</u>	<u>33</u>
<u><i>Utricularia gibba</i></u>	<u>Gary Lange</u>	<u>34</u>
<u>Breeder's Award Program Report</u>	<u>Steve Edie</u>	<u>35</u>
<u>Horticulture Award Program Report</u>	<u>Mike Hellweg</u>	<u>36</u>
<u>2020 Year End HAP Report</u>	<u>Mike Hellweg</u>	<u>37</u>
<u>Shop Hopping</u>		<u>38</u>
<u>2021 Club Hopping Events</u>	<u>Steve Edie</u>	<u>39</u>
<u>AKA 2021 National Convention</u>	<u>Jack Heller</u>	<u>40</u>
<u>ACA 2021 National Convention</u>	<u>Pat Tosie</u>	<u>41</u>
<u>Member Classifieds</u>		<u>42</u>
<u>Advertisers & Sponsors</u>		<u>44</u>
<u>Supporters and Friends</u>		<u>46</u>

Article Photos are provided by the Author unless otherwise noted.

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





FROM THE PRESIDENT'S TANK

Pat Tosie

The NEW YEAR is finally here!

It's going to be an exciting year for MASi and we have a couple of giant events planned.

2021 2021

2021 2021

2021 2021

2021 2021

2021 2021

2021 2021

2021 2021

2021 2021

2021 2021

MASI will host the **American Killifish Association 2021 Convention** June 11th through the 13th.

We will host the 2021 **American Cichlid Association** July 23 through the 25th.

So MASi will be front and center of the organized fish hobby in the United States!

We will need a lot of help and it will be the best place to be to meet fish hobbyists from all over and have the opportunity to get some of the newest and best fish available. Our membership is over 200 strong and we can use each and every one to help make these events the best that they can be and by doing so you will also get to meet some of the top hobbyist in the country.

Don't forget about our monthly activities, Even in the months when we don't meet face to face, we have activities going on- one is the monthly bowl show. It is a virtual bowl show, classes are posted and you enter pictures of your fish on our Facebook site. We also have our monthly speaker series, now on YouTube hosted by Jake who does a great job. The speakers are top notch.

I too look forward to the meetings coming back when things are safe enough again for us to have in-person meetings.

Keep looking below water...

Chuck Bremer

FROM THE EDITOR

As we recover from 2020 you will find several Features in this Darter.



- **We have our first "Help Wanted" ad**, as a sign that things are improving in the Aquatic Hobby.
- **We have a new Author.** How about trying your hand at writing? Don't worry, the goal is to make you a success.
- **The plant section of this issue** is nearly as large as the fish section, thanks to Gary.
- **We have a first member from Down Under!**
- **An article needed for a while is introducing children to the hobby.** If the hobby is to stay strong we must start there. Thanks Steve!
- **For this issue we did not dip into the Exchange reservoir of publications** and were still able to provided needed articles from our own local authors. The Exchange Editor helps locate those articles when needed and also sees to highlight new ideas from other clubs to our own Council for consideration.

Read and give feedback what you do and don't like about it!!
We want to continually improve The Darter!!

Content deadline for the next Darter of 2021 is March 9th.

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





MEMBERSHIP CHAIRMAN

Ed Millinger

MASI Exceeded 200 members in 2020!

**In my opinion this
is cause for
celebration!**

Thank You Everyone!

**The Missouri
Aquarium Society has
never before exceeded 200
members in its over 50
year history!** To do this in a
year with so many
challenges is just amazing.

MASI has been growing steadily over the past few years and did exit 2019 with above 190 members. However, COVID halted Face-to-Face meetings in March when renewals were due and because many renew in person at the monthly meetings we lost approximately 80 members who likely would have renewed at the March meeting. Some have since renewed.

No one knew when F2F would return and our activities faltered as we tested the new waters to see how long they would last. MASi has had an increasing, although difficult at times, social media presence over the past few years and, when resumption of F2F appeared to be longer in coming than we or our fish would like, some of our newer and more tech savvy members stepped in to link social media efforts more closely with the F2F portion.

MASI also made some changes in ongoing programs, utilizing Parking Lot - Bag for Bag Swaps to replace BAP, HAP programs in

MASI New Memberships!

Azher Sameer Ahmed	Manchester, MO
Olivia Blanton	O'Fallon, MO
Jess Bowers	Ballwin, MO
Rennie Finley	O'Fallon, MO
Amanda Harrold	St Louis, MO
David Janikowski	Greenacres, WA
Josh Kaminski	Ballwin, MO
Blake Knackstedt	Boonville, MO
Graham Lathleiff	Umina Beach, NSW, AU
Claire Mentzer	Edwardsville, IL
Jan T Olson	Lake Lotawana, MO
Kathryn Simkiins	St Louis, MO
Jacob Smith	New Haven, MO
Marty Tesson	O'Fallon, MO
Josh & Diana Voeks	Theodosia, MO
Justin Warnock	Saint Peters, MO

New since November!



**2020
Ended with
209
Members!**

**Paid 2020
Membership
includes 2021
Gratis!**



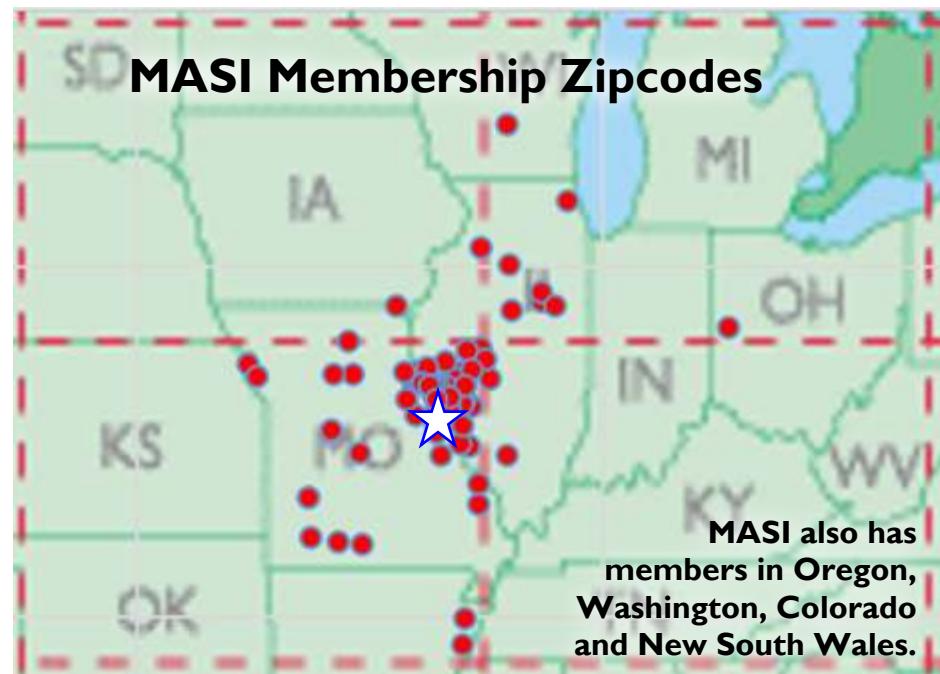
facilitating movement of new fish and plants to the area around the club to good success and have been able to continue this very important club activity! We also moved a previously faltering Bowl Show to a virtual Bowl Show on social media and have actually increased participation there as well.

The resumption of Monthly meetings in an online, public format enabled us to get some speakers we might not otherwise have had and memberships began to increase again, accelerating toward the end of 2020.

Unfortunately, some of the smaller clubs across the US haven't been so lucky and have found it to be a very difficult year. Many of our new members have likely been the result of less fortunate clubs' members searching for alternatives.

Although there are notable exceptions, most of the new members are actually still local to the St Louis area within a radius of 150 miles. These members are ready to resume F2F participation when that is possible.

As a club we have several ideas in the works, including some virtual in nature as well as F2F.



We will be continuing the MASI tradition of hosting National Conventions for the major Aquarist groups. This summer, conditions permitting, we will be hosting both the American Killifish Association and the American Cichlid Association's national convention.

We also plan to increase our virtual presence by facilitating local on-line activities, many of which may eventually replace or facilitate traditional F2F activities. There will be some interesting years of recovery and growth that follow 2020!

We, like others, will be seeking the "New Normal". We're glad to have so many members who bring additional expertise and ideas.

Together the Missouri Aquarium Society will be able to move into the Future and continue to support the Aquatic Hobby!

For the Future!

I am looking for someone to take over the position of membership chair of MASI. I have picked this time because all 2020 memberships are good through the next year so 2021 should be a breeze. It will be a good year to learn the ropes.

Being Membership Chair is a great way to meet all the members and become invested in the operation of this great aquarium society. If you have any questions fell free to contact me:

amazoneddy1@yahoo.com

Membership Year	Lost	New	Pct Lapse	Pct New	End of Year
2015	13	NA	14%	NA	92
2016	27	NA	26%	NA	105
2017	20	24	15%	18%	132
2018	28	43	18%	28%	155
2019	64	65	33%	34%	192
2020	80		38%	209	



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



Heather Burke: Danios and Danionins



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

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



28 year old Heather from Charlotte, MI,

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



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



MASI General Meeting - FREE Webinar: 7:30 PM CT, Thurs, February 18th, 2021!!



Mike Hellweg: Meet the Wild Bettas

"I will introduce you to all the *Betta* species groups and most of the 70 or so known species of the genus. There is emphasis on keeping and breeding methods. I share my personal experiences keeping more than 50 species and breeding more than 30. The fancy *Betta splendens* is not covered except in passing, as they're worthy of their own in-depth coverage."



Bio: Mike has been fascinated by fishes all his life, having them as pets since he could barely reach the top of the goldfish bowl! He has successfully bred and traded fish with local shops since he was 9 years old. Over the past five+ decades he has specialized mainly in miniature fishes, his 475 successful species spawns representing 33 families of fish.

Mike owns a small fish hatchery and maintains about 100 tanks totaling 3000 gallons. Of the Missouri Aquarium Society he is both top ranked breeder (BAP) and top ranked aquatic horticulturist (HAP) of all time. In the HAP he has propagated over 320 species of plants from 50 families including over a dozen by seed. He is an ALA Century Breeder, spawning nearly 150 species of Livebearers. He credits all of these successes to large regular water changes, live plants in every tank and culturing and feeding an assortment of live foods daily for both breeding stock and fry grow-out.

Over the past three decades, Mike has given 350+ talks to classes, clubs, groups and conventions of the USA and Canada, and has documented many of his keeping and spawning successes in over 375 articles published in hobby publications around the world. TFH Publications published his two books on live foods and he has written a very popular booklet on shipping fish which he distributes himself.



tinyurl.com/MASI-video



**MASI General Meeting FREE
Webinar: 7:30 PM CT, Thurs,
March 18th, 2021!!**



Joe Faszl: Water Quality

Water Quality: The Fundamentals.

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

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



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



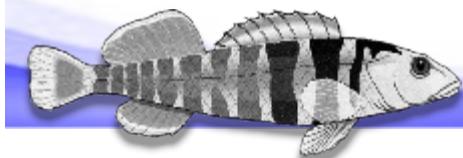
JOE STARTED A pursuit of saltwater aquariums in 1977 with a 15 gallon metaframe aquarium. In 1986, he moved up to a 55 gallon aquarium with crushed coral and an "advanced" reverse flow under-gravel filter. Later, Albert J. Thiel's book, *Small Reef Aquarium Basics*, began his quest to keep saltwater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

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



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





The DARTER

Additional Public Webinars

Check the hosting club's homepage ahead for how to join. Some require pre-registration.

Schedules change and programs may be added or canceled with little notice so check homepages frequently for additional offerings or changes. LOGOs click through

Enjoy!

MAS - Minnesota Aquarium Society - aquarium.mn



Thu, Feb 4 at 7:15 pm CT

Domestic Betta Splendens

Holly Rutan will cover a history of the fish's origin, the various types in the hobby, and their keep and care. She will also discuss basic genetics and breeding of bettas, including the latest strains entering the hobby.



GCCA - Greater Chicago Cichlid Association - GCCA.net



Sun, Feb 7 at 8 pm CT

Project Piaba

Jackie Anderson is the Education Materials Coordinator for Project Piaba, a non-profit corporation made entirely of volunteers dedicated to fostering wild caught beneficial aquarium fish fisheries. Jackie shows how the home aquarium fish industry is driving environmental conservation in environmentally sensitive areas within the Amazon River watershed.



EIAA - Eastern Iowa Aquarium Society - finflap.com



Tue, Feb 9, at 7 pm CT

Filtration- Matten filters and more

Stephan Tanner will explain how different types of sponges help the biological filtration in aquariums. He is a very knowledgeable speaker and also a Publisher of AMAZONAS magazine.



"Fish, my reason for being!"

MAS - Minnesota Aquarium Society - aquarium.mn



Thu, Mar 4 at 7:15 pm CT

Adventures in Fish Breeding

Mike Hellweg's Breeding tips and tricks from a master breeder, national author and winner of TFH Fish Breeder's Challenge.

CLS - Chicago Livebearer Society - chicagolivebearer.com



Sun, March 7 at 7 pm CT

Characodon Genus Review

Michi Tobler speaks on "A natural history the vanishing Mexican desert fishes of the genus Characodon"

Michi is a Professor of Biology at Kansas State University and researcher on evolution and ecology of livebearers. He also contributes articles to AMAZONAS.





COUNCIL MINUTES

Executive Council

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

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

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

Next Executive Council Meeting:

Thursday, January 28, 7:30 PM on Zoom

Give the Council your Feedback or Support!

COUNCIL MEETING

10/22/20

Gary Lange called the Zoom meeting to order at 7:33. Present were Jack Heller, Angela Hellweg, Ian Eggert, Charles Harrison, Jake Harris, Holly Paoni, Caleb Pitman, Mike Hellweg, Chuck Bremer, and Chris Mohrle.

ANNOUNCEMENTS:

- The next Council meeting is Monday Nov 23.

REPORTS:

- **SECRETARY:** Angela read the Minutes from the Sep meeting. A motion to approve was made by Mike Hellweg and was seconded by Charles Harrison. The motion passed.
- **TREASURER:** Jack read the Treasurer's report. A motion to approve the amended report was made by Holly Paoni and was seconded by Ian Eggert. The motion passed.
- **EDITOR:** The deadline for submissions for the Nov/Dec Darter is Nov 9.
- **CONVENTION/BANQUET:** A motion to postpone until Spring 2021 was made by Chris Mohrle and was seconded by Charles Harrison. The motion passed.
- **AKA CONVENTION:** Speakers have been lined up and the checking account has been opened.
- **AUCTION:** The location for the Nov 8 parking lot swap is still being determined. Mike is looking at online auction programs that other clubs are using.
- **HAP:** Mike said online submissions have been going well.
- **POINTS TABULATOR:** Kevin Wise now has the information he needed from Melanie Holmes.
- **SOCIAL MEDIA:** Five additional administrators are needed to manage the MASiC social media sites.

- **WEBMASTER:** Charles needs links for the monthly speakers to post on the MASiC website.

OLD BUSINESS:

- A motion to table the FORC report approval until next month was made by Holly Paoni and was seconded by Mike Hellweg. The motion passed.
- A motion to cancel the Christmas party was made by Holly Paoni and was seconded by Ian Eggert. The motion passed.

NEW BUSINESS:

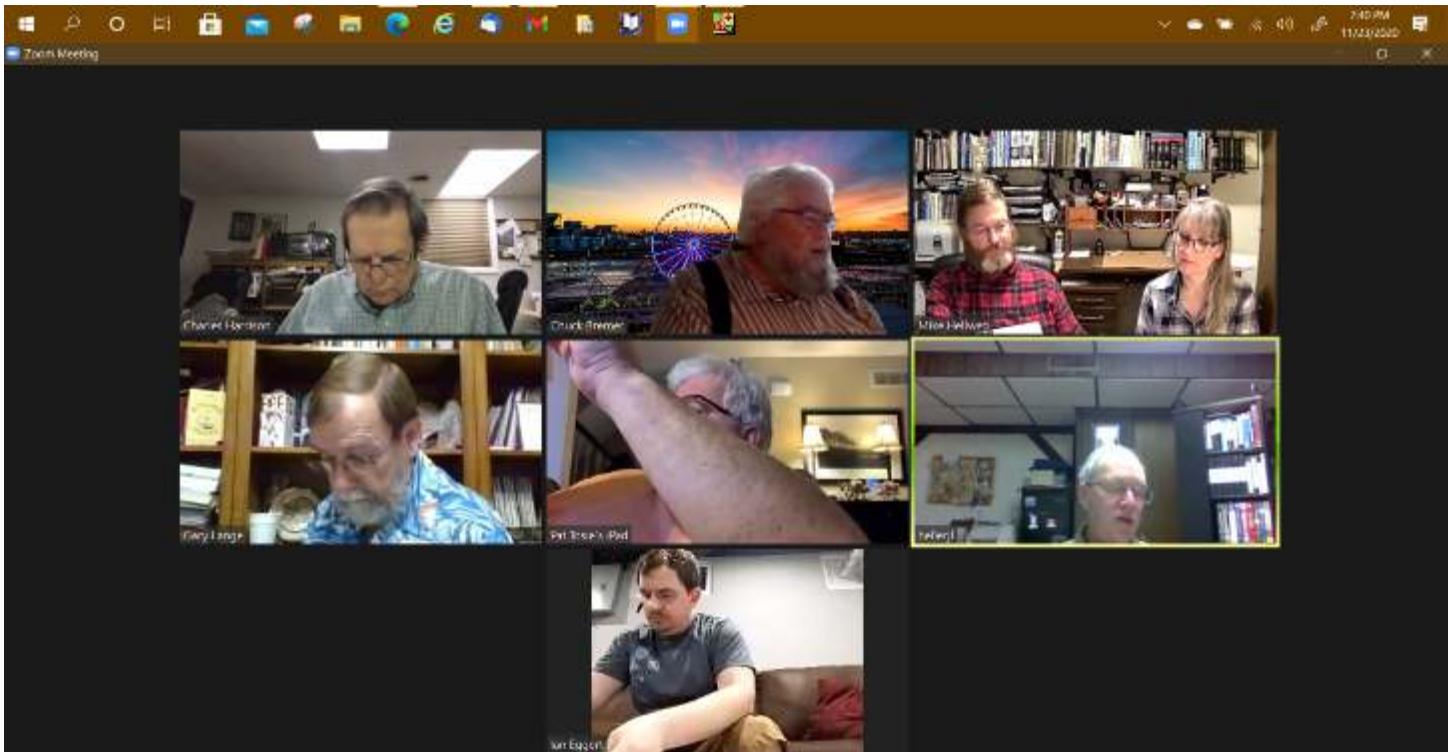
- None

A motion to adjourn at 8:35 was made by Mike Hellweg and was seconded by Charles Harrison. The motion passed.



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





COUNCIL MEETING

11/23/20

Pat Tosie called the Zoom meeting to order at 7:33. Present were Gary Lange, Jack Heller, Angela Hellweg, Ian Eggert, Charles Harrison, Mike Hellweg and Chuck Bremer.

ANNOUNCEMENTS:

- The next MASI speaker webinar is Dec 17
- The next Council meeting is Dec 28.

REPORTS:

- **SECRETARY:** Angela Hellweg read the Minutes from the Oct meeting. A motion to approve was made by Mike Hellweg and was seconded by Chuck Bremer. The motion passed.
- **TREASURER:** Jack Heller read the Treasurer's report. A motion to approve was made by Charles Harrison and was seconded by Ian Eggert. The motion passed.
- **EDITOR:** The Nov/Dec Darter has been sent out. The deadline for submissions for the Jan/Feb 2021 issue is Jan 11.
- **ACA CONVENTION:** Pat said that registrations are being accepted.

• **AUCTION:** The next auction is scheduled for Feb 28. Mike is hoping to have an online auction soon.

- **LISTMASTER:** There are currently 191 MASI memberships.
- **SPEAKERS:** Gary has speakers lined up through Jan 2021.
- **SWAP:** There were 36 attendees at the Nov parking lot swap.

OLD BUSINESS:

- The 2020/2021 MASI Challenge for Native Fishes Conservation has raised \$841.00 so far.
- A motion to approve the 2020/2021 FORC Budget and Report was made by Mike Hellweg and was seconded by Charles Harrison. The motion passed.

NEW BUSINESS:

- MASI is currently looking for a new Membership chairman and Exchange Editor.

A motion to adjourn at 8:43 was made by Charles Harrison and was seconded by Ian Eggert. The motion passed.



HELP WANTED!

@ Seascapes

Studio!! (Store Ad
elsewhere in this Darter)

Aquatic Specialist: Retail saltwater specialty store is looking for both a full and part time associate to clean and maintain the aquariums at the store. Some knowledge of saltwater aquariums is preferred. Opportunity to move up to field service and retail positions as well. Up to \$15 per hour based on experience. Flexible hours.

CONTACT:
Joe Faszl

Seascapes Studio

**3802 S. Lindbergh Ste. 103
St. Louis MO. 63127**

314-843-3636





MASI LIBRARY REPORT

Mike Huber



Hi MASI members!

I report on the MASI Library to the Council on Dave Rush's behalf.

YES - that's right, for all the new members, we have a very good library with books that can be checked out for a month at a time when we get back to face to face meetings. To check them out contact Dave Rush who's Contact is on Page 2 of this Darter.

All the books have been in tubs with no organization. They are now in tubes by categories- all the plant books in one tub, live bearers in one and so on.

There are some books on this list that have gotten lost but there are quite a few books not yet included so we are updating the master list and making a list for what books that are in each tub.

In the future, when a member wants to check one out there will be a complete list of everything we have.

Succeeding volumes in a set and videos have been omitted from this list. In addition there are several newer additions that are also not yet included.

Watch this space for recent additions and easy check out numbers!!



Bettas, Gouramis, and other Anabantoids		Vierke
Gouramis and other Anabantoids		Richter
Labyrinth Fish - the Bubble-Nest-Breeders		Linke
Aquarium Atlas #1 & 2		Baensch
Dr. Axelrod's Atlas of Freshwater Fish		Axelrod et al
Encyclopedia of Fish		Burton
Exotic Tropical Fishes Expanded Edition - in 2 Binders		Axelrod et al
FAAS Species Size Guide		Fazio
Sterba's Freshwater Fishes of the World Vol. 1 & 2		Sterba
Breeding Aquarium Fishes - A complete introduction		Axelrod
How to Keep & Breed Tropical Fish		Emmens
Know How to Breed Eggayers		LaCorte
The Fascination of Breeding Aquarium Fish		Axelrod & Sweeney
A Complete Introduction to Corydoras		Burgess
An Atlas of Freshwater & Marine Catfishes		Burgess
Catfish		Emmens
Catfishes of the World Vol. 1- 5		Sands
Dr. Burgess' Atlas of Freshwater & Marine Catfishes		Burgess et al
A Tale of Two Tilapias		Unknown
African Cichlids of Lakes Malawi & Tanganyika		Axelrod
Angelfish		Walker
Cichlid Atlas 1		Romer
Cichlids & all other Fishes of Lake Malawi		Konings
Cichlids & all other Fishes of Lake Tanganyika		Brichard
Discus		Voderwinkler
Dwarf Cichlids		Vierke
Introduction to the Cichlids		Goldstein
Mbuna		Johnson
The Cichlid Aquarium		Loiselle
The Cichlid Fishes fo the Great Lakes of Africa		Fryer
The Cichlids Yearbook Volume 1		Konings
The Most Complete Lexicon of Cichlids		Axelrod et al
Cure and Recognize Aquarium Fish Diseases		Schubert
Parasitology of Fishes		Dogiel et al
Prevention & Care Tropical Fish Diseases		Cohen
A Fishkeeper's Guide to Maintaining a Healthy Aquarium		Carrington
A History of the Aquarium Hobby		Klee
Advanced Aquarist Guide		Ghadially
Aquarium Guide		Kelly
Encyclopedia of Tropical Fish		Axelrod et al
Exotic Aquarium Fishes		Innes



MASI's Books, Books and More Books in our Library



Fish & Their Behavior	Zupane
Guppies to Groupers Handbook	Speice
Illustrated Dictionary of Tropical Fishes	Frey
School of Fish	Keppler
The Water Book	Barnstead
Tropical Fish	Gohm
Water Chemistry for Advanced Aquarists	Huckstedt
Working with Plexiglass - 4 Pamphlet set	Unknown
A Fishkeeper's Guide to Koi	James
Coldwater Fish	Ladiges
Hong Kong Goldfish	Man
Koi of the World	Axelrod
The ABC's of Goldfish	Teitier
Culturing Live Foods	Hellweg
Plankton Culture Manual	Hoff & Snell
Wingless Fruit Flies	Flagg
Atlas of Livebearers	Wischnath
Atlas of Livebearers	Wischnath
How to Raise Show Guppies	Wasserman
Killifishche aus Aller Welt	Radda
Lebendgebarende Zierfishche	der Welt
Mollies in Color	Axelrod
A Fishkeepers Guide to Marine Fishes	Mills
Artificial Propagation of Marine Fish	Shelbourne
Caribbean Reef Fishes	Randall
Encyclopedia of Sea Horses	Bellomy
Keeping Sea Horses	Straughan
Pacific Marine Fishes Books 1 - 7	Burgess et al
Saltwater Aquariums: Principle and Practice	King
Seahorses	Unknown
Seahorses in your Home	Bellomy
Snorkeling Guide to Marine Life Florida, Caribbean, Bahamas	Humann & DeLoach
The Book of the Marine Aquarium	Dakin
An Introduction to Missouri Fishes	Pfleiger
The Fishes of Missouri	Pfleiger
Aquarium Plants	Kasselmann
Aquarium Plants the Practical Guide	Tepoot
Encyclopedia of Water Plants	Stodola
Water Plants in the Aquarium	Scheurmann
Goldfish Pools, Water Lilies & Tropical Fishes	Thomas
African Barbs	Axelrod
Characoids of the World	Gery
Killifish - Their Care and Breeding	Terceira
Pearl Killifishes	Costa
Rasboras	Brittan
Rivulins of the Old World	Scheel
The Best of the RSG	Various





MASI AUCTION MESSAGE

Mike Hellweg

This is my 50th bimonthly Auction Chairman's report, and once again I have nothing new due to COVID.

What I can tell you is that there will be an event on February 28th! I'm just not yet 100% sure what it will be and whether it will be in person or online, or if in person, how it will work or where it will be. **Planning is well under way**, but I'm not yet ready to release the details here - it's just too far out and there are still too many "ifs". In the meantime stay in your fishroom, change lots of water, and if you go out, wear a mask!

You now have a good reason to watch the Facebook page, Band page, website and your email for updates as we get closer.

I feel like a
broken
record... again!

And for now, 'nuff said,

Mike : Auction@missouriaquariumsociety.com

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



MASI member spotlight -
Melanie Holmes Aquascape...



Know Your Speaker - Gary
Lange



MASI Member Spotlight:
Charles Harrison



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

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Heather Burke discuss
Danios and Danionins this
month.

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KNOXVILLE, TN



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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.



**GOAL:
\$2000+**



KNOXVILLE, TN

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

Featured species profile: © CFI

***Etheostoma douglasi* | Tuscaloosa Darter**

CFI propagated the Tuscaloosa Darters in 2003 for USDA Forest Service, Southern Forest Research Station in Oxford, MS. We were tagging the otoliths of these fish with an oxytetracycline dye and then sending the fish to Susie Adams. Susie was analyzing the growth rate of the otoliths. This was very useful information because we knew their exact ages of the fishes when their otoliths were marked. Hopefully this information has been put to good use in darter aging by looking at the otoliths.

This was a moderately challenging species to work with, but over a couple years we were able to provide 61 individuals for this research.





CHRIS

Bowl Show

propagationaquatics@gmail.com

Virtual Bowl Show Winners



HOLLY

Social Media

hpaoni@gmail.com

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

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

We hope to see everyone enter the contest soon!



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

[Link to Rules and Placement on FB](#)

JANUARY -

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

FEBRUARY -

- **Class A** - Old World Cichlids
- **Class B** - Hobby Related Art. Must be made by person submitting

MARCH -

- Class A- Killies & Ricefish
- Class B - Natural Aquascapes. (Use of driftwood, rocks, and live plants)

APRIL -

- Class A- Cories. Includes Aspidoras, Brochis, Corydoras and Scleromystax catfish .
- Class B - Fancy Finned Bettas

MAY -

- Class A - Fancy Finned livebearers
- Class B - Unnatural aquascapes. (Legos, toys, fake plants, etc.)

Each entry earns 1 Fishy Buck.

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

Anyone can have 5 entries per month... So start collecting those fishy bucks, for our awards banquet fishy buck auction.

Get those entries in. ;-)



November Bowl Show -

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

Julia Cross

This is A-aaron. He's a fantail goldfish. My guess is he's 9 months old. He is very hungry all the time and has grown to the point that he can swallow a mini algae wafer whole. Which I can no longer feed because of him. He loves eating hornwort and doesn't like duckweed. He really enjoys zucchini as well.



Blake Knackstedt



Bubbles & Squeak, Fantail Goldfish around 4 inches long. They were brought in together and are around 1 year old. They love to wobble and eat!

CLASS B - Your Favorite Tool or Hobby Gadget

Laura Morrison

All of my gadgets are kitchen gadgets. I'm not much of a cook, but I can usually find handy things in our kitchen!

My favorite gadget is the Turkey Baster! I use mine to feed brine shrimp and black worms to my fish, its a handy little mini vac if I need to pick up something off the bottom of my tanks like uneaten food or dead leaves and my favorite use is to start a siphon hose. Sure beats getting a mouth full of fish water!



This Mr Coffee re-useable coffee filter is another favorite. I use it to strain brine shrimp after hatching. I love this thing. Fine enough to not let the brine shrimp thru.



Kyle Wyckoff

The poor man's Python: a water circulation pump hooked up to 35 feet of tubing. Pump water out of the tank, then run water from a bathtub into a bucket, switch it around to fill the tank back up. Very useful and fast if you don't have a sink that is adaptable with a Python!

Clarissa says - I'm very proud of this! It also eliminates wasted water!



Julia Cross

This wonderful measuring cup that includes ml, tablespoons, and oz. I use it for fertilizer daily. You can also use it for salt, medications, or even thawing your frozen foods in water before feeding. Just ordered another one that's smaller for the smaller tanks.



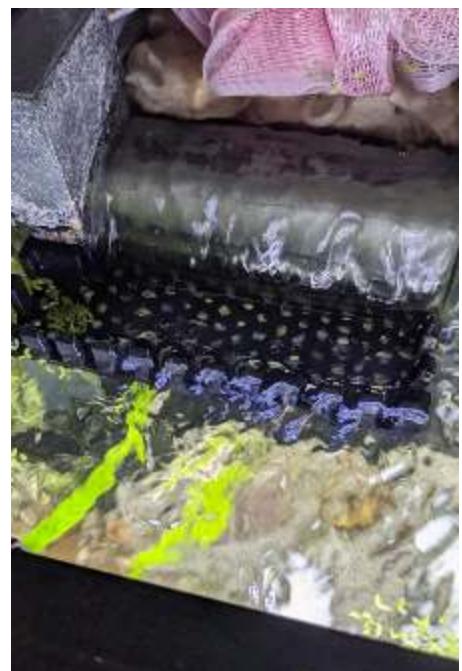
Floyd Conrad Sr.

Not my idea but thought I would share that **the pump head off the Plant fertilizer bottle fits right on the small 100 ML Prime bottles** and squirts out 1 ML per 10 gallons of tank water. Making water changes a little faster and taking the guess work out of measuring from the Prime bottle cap.



Blake Knackstedt

3D printed aquaclear 70 baffle. This helps distribute extra water agitation and is custom fit for Aquaclear HOB!



December Bowl Show -

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

Melanie Holmes

Comb Tailed Gourami



Clarissa Wyckoff

Betta rubra



Steve Coxon

Betta imbellis

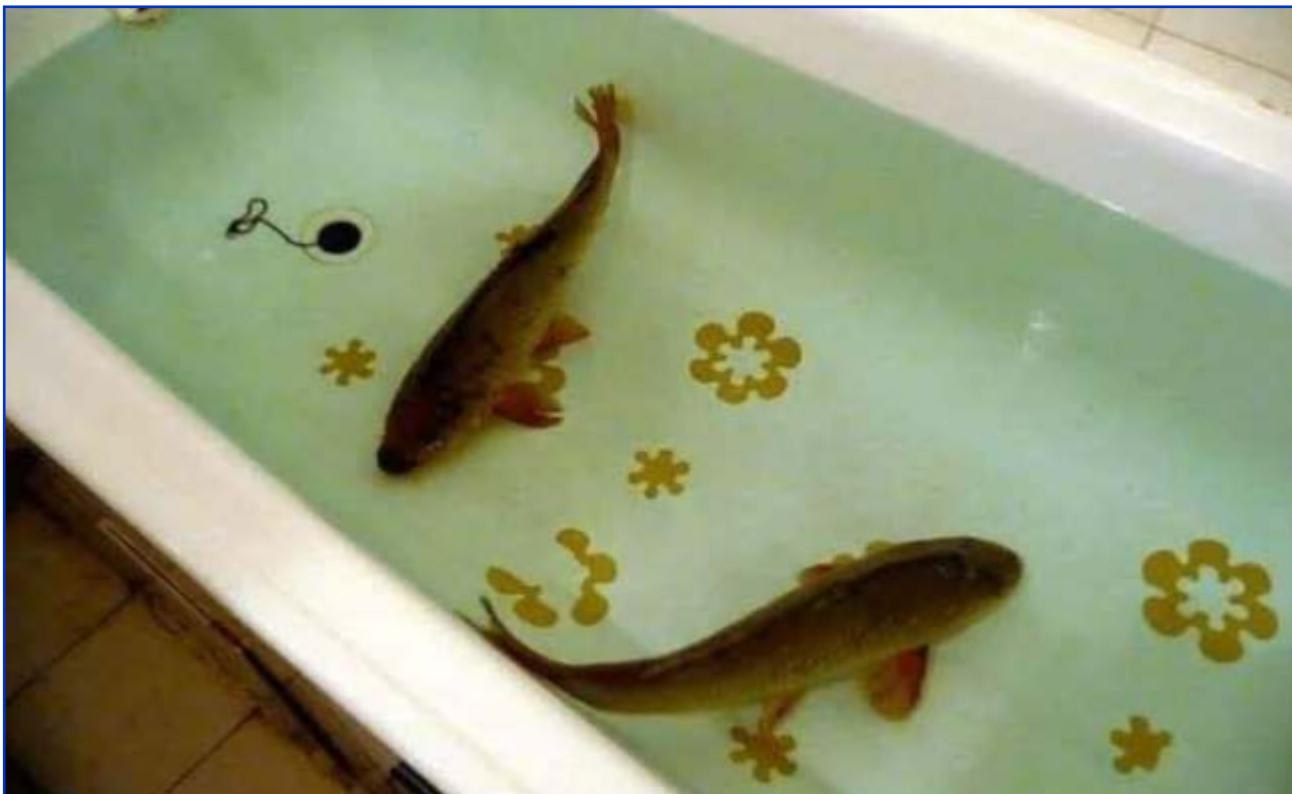


**Fancy
Betta's Cousins!**



December Bowl Show - **Kathy Pilarcik Deutsch**

Class B - Holiday inspired tanks **Traditional Polish Christmas Dinner!**



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My Outdoor Paradise

By Chuck Bell

HOMEBOUND WITH THE winter "blahs"? Anticipating the Spring, and pond season, brings out the excitement of working with plants and fish, and a renewed creation for the upcoming season.

This article will hopefully be fun, and bring back memories of our outdoor season. Being retired, and having a bad hip, the pond and plants bring me many hours of enjoyment and relaxation. I incorporate many pond, bog plants, tropical, and flowering plants.

I move my aquarium fish to the ponds around mid-May by putting outside swordtails, pleco's, kribensis, angels, and assorted catfish. They seem to thrive in the outdoor setting with minimal effort.

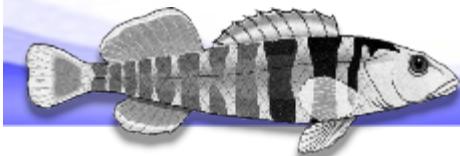
You get the benefits of water changes from the ponds and aquariums. Many hobbyist just flush their waste water, but it is fantastic for outdoor plants, and as an additive to winter gardens. As in these pictures, plants grow fuller, taller and have more blooms when fertilized with the waste water.

My elephant ear plants routinely grow to 6 feet and the flowering plants have an abundance of blooms. The combination of pond, bog, and ornamental plants create a picturesque, peaceful and relaxing landscape. Along with feeding the fish, and neighbors stopping by to enjoy the combination of the plants and fish, it's made a much more enjoyable outdoor season in these crazy times.

Enjoy this article, and pictures. Remember, the most important tidbit I would share, is that beautiful fish make better looking plants!

Don't throw out that liquid gold! Use it in your garden!





Sharing the Aquarium Hobby with Children

By Steve Coxon

IF YOU HAD told me a few years ago that I would have an aquarium with purple gravel or one dedicated to platies, I wouldn't have believed you. And yet, when my then nine-year-old daughter Sage asked for her own aquarium, what could a fishy dad say? My other two kids, Emerson and Mavis, ages 7 and 4 respectively at the time, soon followed in their requests.

Ask just about any aquarist when he or she started in the hobby, and you're likely to hear about a childhood aquarium. My love of the aquarium hobby started with a koi pond at a shopping center on a family



Watch the tank!

Sage's platy and gouramis (age 10)

vacation to Hawaii when I was four. Apparently, I was so enamored with the koi that my folks bought a 10-gallon aquarium for me when we got home. As it turned out, my parents weren't interested in caring for an aquarium and it was soon gone. However, a few years later in elementary school, I sold some toys at a garage sale and used the money to buy a flea market 20 gallon. I have had aquariums ever since.

Now that I have my own children, I've found that there is a lot I can teach them through the aquarium hobby and it is a great way to spend time together. Sage, now 10, often accompanied me to MASi meetings and events pre-pandemic. When she first became interested, I handed her my childhood aquarium

book, Herbert Axelrod's Starting Your Own Tropical Aquarium from which she and subsequently my other two children picked the fish that interested them most. Sage keeps platies and gourami, Emerson loves rams (although I steered him away from German blues to the hardier Bolivian), and Mavis has a tank full of dwarf neon (*Melanotaenia praecox*) and ornate rainbowfish (*Rhadinocentrus ornatus*).

Along with being a father and aquarist, I am also a former elementary school teacher and current professor of education. As such, I am very interested in child development and learning. The Austin Aquarium (austinaquarium.com) lists 10 educational benefits summarized here as enhancing vocabulary, hands-on learning, relaxation, imagination, real world learning, family bonding, appeals to a variety of learning styles, appreciation of nature, educational engagement, and encouragement of scientific exploration. I have seen these benefits with my children and encourage other hobbyists to engage children in their lives as well.

To help, I offer these general guidelines for engaging children in the aquarium hobby:

- I. Start with a reasonable size tank** for the child. 10-30 gallon aquariums are large enough for water stability but small enough that the child can



Emerson's rams (age 8)



take part in maintenance. Each of my children has a 20 gallon long in my fish room. Sage also has a palludarium for newts in her bedroom.

2. Give children as much choice as reasonable in fish selection. Five-year-old Mavis is very interested in flying fish, but obviously those aren't appropriate for the aquarium so we've sufficed with YouTube videos and the hope that we'll see them next time we visit the ocean. Rainbowfish also piqued her interest and so I sought out some of the smaller species from MASi members. Notably, my personal interests are in dwarf cichlids and killifish and not in livebearers, gourami, or rainbows. However, these interested my children and we can care for them well, so it was an easy decision.

3. Let children decorate or "scape" their own tanks. Help them understand the habitat requirements of the fish they choose, but there's no need to press your aesthetic on them. As you can see from the photos, each of mine has a distinct style. They were able to choose driftwood, rocks, plants and substrate largely from what I already had on hand. However, Mavis was insistent on "pretty" substrate so I splurged on a bag of gaudy purple gravel for her. Emerson bought the dragon decoration with money that he earned.

4. Involve children in age-appropriate maintenance. I do all of the water changes in the fishroom in the evenings after the children are in bed, but Sage helps with water changes on her palludarium. When Mavis was just starting, I always kept

the food out of reach and portioned it for her, but now all of the children have learned the appropriate amounts to feed their aquariums and my 50% weekly water changes reduce overfeeding concerns. All of the children enjoy using the magnetic scraper to remove any algae from the front glass. Sage has enjoyed earning some money by selling extra platy within MASi and a local fish store.

5. Teach them about biology and chemistry in real world situations.

The kids all help me test the water and read the results (I'm a bit color blind). Through this, they have learned about different fish requirements, the nitrogen cycle and bacteria, pH, and specific gravity. They have learned about food webs and herbivores, omnivores, and carnivores through the different food we feed. They have even learned a fair bit about reproduction by watching the killifish and Corydoras spawning and helped to raise the fry.

6. Engage children in other aspects of the hobby. There is a lot more to an interest in fish than aquariums.

Sage and Emerson have been snorkeling with me. Mavis enjoys feeding fry with a syringe of baby brine shrimp. Sage started a Walstad-method bowl for cherry shrimp that did so well we had to move the plants and shrimp to a 10 gallon tank. Emerson enjoys aquascaping empty tanks even when he knows we won't be setting them up. All of my children enjoy native fish net, photograph, and release trips to local streams with me. In these interests, children are allowed to explore other areas of the hobby and develop new interests.

Engaging children in the hobby is educational and provides them with many other benefits. It is also vital to the long-term future of our hobby that we engage children to develop future hobbyists. If you have a child in your life that doesn't have an aquarium to call their own, I highly recommend it.



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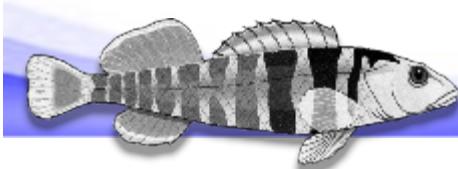
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The DARTER

Minifins

The Celestial Pearl Danio

*Danio
(Celestichthys)
margaritatus*

By Mike Hellweg, CFN
(Certifiable Fish Nut)

ALMOST 15 YEARS ago, in September of 2006, a picture began circulating on the Internet. Rumor was that it was simply a doctored photo, or possibly an actual photo of some sort of hybrid - no fish could look that good that we didn't already know about.

But it was real, and hobbyists around the world were soon reporting breeding success with this new fish, including our own Charles Harrison, who was one of the first hobbyists in the world to breed them. I



© Seriously Fish

give credit where credit is due - Charles beat me out by a couple weeks. They're great fish and don't take up much room, so both Charles and I have had them going in our tanks ever since. But what the heck was it?

Early on it was given the trade name of "Galaxy Rasbora" and also "Fireworks Rasbora". Every once in a while, I still see it on wholesale lists with one of those two names. At the time scientists agreed that it didn't fit into any of the known Cyprinid genera, and on February 28, 2007, Tyson R. Roberts of the Smithsonian Tropical Research Institute released his formal

description of the species, erecting a new genus for it, and giving it a new common name - *Celestichthys margaritatus* - The Celestial Pearl Danio (CPD).

Nomenclature has changed several times over the past 15 years; they have been moved to the genus *Danio*; then separated back out into *Celestichthys* again along with their cousins the emerald dwarf Danio (*Danio erythromicron*), the glowlight Danio (*D. choprae*), the Northern Glowlight Danio (*D. flagrans*) and the newest member of the group the blue glowlight Danio (*D. htamanthinus*).



Native habitat

Ye Hein Htet (Hein Aquarium)



Currently they are back in *Danio*. Stay tuned.

Dr. Roberts coined the common name of Celestial Pearl Danio (CPD) to reflect that they are actually Danionins and not Rasborins as we had thought originally. According to Roberts, he coined the generic name "*Celestichthys*" from the Latin word "*caelensis*" which means "heavenly" and the Greek word "*ichthys*" which we all know means "fish".

He says the specific name "*margaritatus*" is also Latin and means "adorned with pearls". Therefore "*Celestichthys margaritatus*" means "heavenly fish adorned with pearls" - a great descriptive name with which a person not knowing the fish but seeing a picture of them would be easily able to figure out which fish the name was referring to, but a bit awkward to use in conversation.

So he coined a beautiful new common name to reflect both the scientific name and the newly discovered generic relationship to Danios - Celestial Pearl Danio. What a great name for such a cool fish! Of course, in our hyper fast world where we have to shorten everything, we have cheapened this beautiful name to just CPD. Ah, well.

With the subsequent explosion in popularity of both Aquascaping and nano tanks the CPD has also exploded more in popularity, if that's even possible. When I go to swap meets, I usually take 60 to 100 CPDs and I've not yet returned with a single fish, even with many other sellers also selling them. They are always in demand.

Pet shops that I deal with are always asking for them because they can't keep them in stock, either. I even have to regularly purchase them from importers because even raising 100 - 200 fish a month, I can't raise enough of my own fish to meet customer demand. 15 years after it exploded onto the market and it is still in high demand!

This might spell doom for some wild fish, but the wild CPD populations have proven so resilient that despite claims to the contrary, the initial collections did no measurable damage to the wild population. Now it is commercially produced by so many farms and independent breeders around the world that anyone who



Sparring makes



Female

wants them can find captive bred stock without causing any harm at all to the wild stock. In fact, I don't think wild caught fish are even available anymore.

This is a very good thing, but their initial discovery could have been a disaster for the fish and serves as a cautionary tale to all of us. They were first found in a small pond in the mountains of Myanmar (Burma) on the Shan Plateau around the town of Hopong in the outskirts of the Shan state capitol of Taunggyi. Realizing they had something special, collectors quickly caught all of the fish in the pond and sold them.

A few weeks later when scientists went looking for where these amazing new fish had been found, it seemed there were no fish left. They were already being declared extinct, wiped out by the greedy aquarium hobby. But the real reason that the scientists at first couldn't find them was two-fold - one they were using too large of mesh nets to catch the thousands of young fish in the pond, and two the young fish, as part of their survival instinct, dive for cover in the muck on the bottom, where they almost literally disappeared.

Their amazing fecundity was soon revealed in that the young fish are precocious breeders, spawning when they are barely 10 weeks old - long before they are large enough for nets to catch them, and way before they reach adulthood. So very quickly the "empty" pond was completely full of

fish again. What's more, they were subsequently found in literally hundreds of ponds all over the Plateau from about a half mile above sea level to over a mile above sea level. It turns out much of their range is on a huge military base and in the closed areas around it - places where few locals and no Westerners were allowed to go.

This widespread occurrence, plus their ease of breeding and rearing in captivity, allowed the CPD to go from a cautionary tale of disaster to a huge success story that continues to this day. Even though this tale turned out well, as responsible hobbyists we need to make sure it never happens again. Any fish in our tanks should be considered for breeding projects, and we should be willing to both distribute the fish and share information about husbandry, breeding and rearing them with anyone who asks.

The first thing to consider when deciding to keep CPDs is the tank. They can be easily kept in a small group in a two to five gallon tank, but they are much more at ease in a slightly larger tank, say 10 gallons. It is best to keep fewer males with more females to spread out their aggression a little, or keep a larger mixed sex group.



Young fry

Yes, that's right, I said aggression. For tiny fish, male CPDs are remarkably aggressive with their conspecifics, especially other males. Like all Cyprinids, they have pharyngeal teeth in the throat that act like a grinder to make their food small enough to swallow. But like some other miniature Cyprinids, male CPDs also have tooth like structures in the jaw called odontoid processes. While the exact purpose of these is still unclear, when you watch two males sparring, at least one use becomes clear. They bite each other's fins.

This fighting can lead to injury if the weaker fish can't get out of the stronger fish's line of sight, or if other



fish in the tank don't interrupt them. When the CPD first appeared in the hobby and we didn't know about this internechine sparring, many males were lost. Now we know to keep them not unlike Lake Malawi Mbuna - in large groups to disperse aggression. Heavy planting also helps - again, breaking up the line of sight.

Males are easy to pick out as they are dark, inky blue with beautiful pearlescent spots on their flanks and bright red to orange unpaired fins. Many dominant males have red or orange on their bellies as well. Females are generally larger than males and less intensely colored, with a silvery or whitish belly, and they are much less scrappy.

As for water parameters, our local St. Louis County tap water suits them fine. They prefer water that is slightly hard and a bit on the basic side of neutral. One of the great things about them is that they do not need a heater. They can easily handle temperatures down into the 50s, if not lower, so they would be excellent candidates for tubbin' outside. They can be the first species out in the spring, and the last one to come in at the end of the season. Either in the tub or in the tank, be sure to give them large, regular water changes. I try to change 50% of their water every 5 to 6 days.

Heavy planting helps not only break up the line of sight, but it also helps replicate their natural habitat. They aren't picky about the species of plants, so whatever suits you is fine with them. Heavy planting requires decent lighting, and CPDs are not shy when it comes to light, so bright light suits them well. One drawback to heavy planting is that they love swimming in and among the plants, so it can be hard to see them. A simple solution to this in a display tank is to add a small school of their cousin the gold ring Danio - *Danio tinwini*. For some reason this species, and only this species (I've tried several others!), seems to draw a group of CPDs out into the open in a heavily planted tank. Try it, it works!

Feeding is easy. They'll eat literally ANYTHING that fits into their tiny mouth. I have had great success over the years feeding them a staple tiny crumble or pellet diet. I add finely

ground spirulina flakes a few times a week. And every day they get newly hatched brine shrimp and/or microworms. That's it.

Cousins:



Emerald Dwarf Danio
(*Danio erythromicron*)



Glowlight Danio
(*Danio choprae*)



Northern Glowlight Danio
(*Danio flagrans*)



Blue Glowlight Danio
(*Danio htamanthinus*)

numbers of them - make sure you have room to raise them to adulthood and/or buyers for them before you start churning out dozens of them every month.

I use this same technique with tetras, other small Cyprinids, killies and many other smaller fish. Set up a 10 gallon tank with a sponge filter. Add a layer of fine leafed plants like Java moss, Susswassertang, or something similar on the bottom. You can add a layer of pea gravel or something similar, use a mesh grid over the bottom, or use a spawning mat. Then add a group of maybe a dozen to 20 or so adults. Feed them twice a day with small daphnia or newly hatched brine shrimp. Leave them in the tank for about a week, then remove the adults. Now leave the tank alone for a few days. Soon you'll start seeing tiny fry darting around just above the plants.

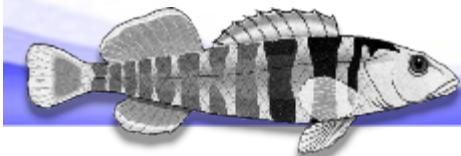
They will find plenty of micro foods living on and around the plants for the first few days. I also add a commercial fry diet like Sera Micron or Golden Pearls to boost the food supply. After about a week, start adding newly hatched brine shrimp and microworms. Don't start doing water changes until they're about a month or so old. Then start slowly with small daily water changes, working up to larger 50% water changes over the course of a couple months. For some reason, Cyprinid fry seem to be sensitive to large water changes for the first month or so. After this, they are tough enough to handle large water changes.

The fry grow quickly, and after just 8 - 10 weeks they are starting to spawn on their own already. At this point they are good to go, but most buyers prefer them a bit larger, so it's a good idea to let them grow until they're about three months old before trying to find new homes for them.

The CPD is a spectacular tiny fish. They make fascinating and colorful additions to a small tank, and a self-sustaining colony can literally be enjoyed for decades.

Whatever you do, don't forget to sit in front of the tank and spend time just watching your fish!





The DARTER

Taming Godzilla

Ottelia ulvifolia
"Okavango Delta",
Flowers and seed

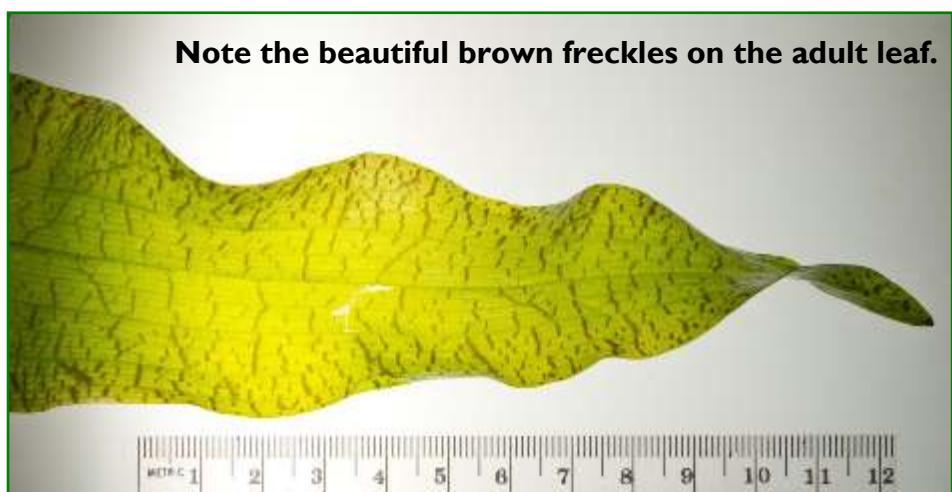
By Gary Lange



YOU WOULD THINK I would know better than to try a plant this big a second time!

I'm a person that likes smaller fish- most of my rainbowfish are less than four inches, but I have this two foot tall 210 gallon tank with high light and CO₂ so it just begs for the big boy plants. For years I've had large stands of *Barclaya longifolia*, *Nymphaea lotus* "Red", and of course my "Queen", *Crinum calamistratum*.

All of these plants take up huge chunks of real estate in my seven foot tank. But six months ago I neglected my *Barclaya* and it failed to spring back so I was in the mood to find



another monster. One that I had before, *Ottelia ulvifolia* sprang to mind.

When I found out that someone with it was going to be at the 2019 AGA conference I went out of my way to obtain some. The last time I had this plant it just proved to be too big. How big you say, well a recent random leaf cutting was 36 inches in length. So if you read about this plant in the latest Kasselmann (English version 2020) realize that she is incorrect in saying that they only grow to 75 cm (30")!

To keep Godzilla (yes, I named it) at bay I use any excuse to trim the leaves. Kasselmann says the leaves are very fragile and for such a big leaf it is. Leaves often get in the way of each

other and push themselves out of the water. Any of those two inch wide leaves with an imperfection are removed and part of keeping Godzilla in check is making sure that I trim at least a dozen leaves off of it each week.

The monster itself, the Okavango Delta version, is a thing of beauty. It is a very pleasant green with





Shortly after Flowering the pod goes to mush

My first problem was trying to understand what happened to the pod. One day it would flower and the next day the flower would be gone. I thought maybe my rainbowfish were eating the flowers and if so I wasn't going to produce any seeds that

way. After a few days the pod would just totally disappear! Were the rainbowfish eating that too? I know that they relished the white marshmallow insides of *Barclaya longifolia* pods!

interesting brown freckles all over the leaf. At the moment the only way to get plants to other enthusiasts crazy enough to want one is to wait several months. When you can see that it starts to separate into individual plants, usually three to four plants, dig it up, make a mess in the aquarium, split it then replant a small portion but this is not a very productive way of producing more plants. I would love to be able to produce seeds and then have lots of young smaller plants for other hobbyists.

Once it's happy and growing it puts out many stalks that have a large pod that floats to the surface. Each pod contains one beautiful yellow flower. I have done my usual trick and dusted the pistil of the flower with a tiny paintbrush hoping that they were self-fertile.



Translucent Pod Post Flower



Translucent Pod Pre Flower



Goo with Seeds

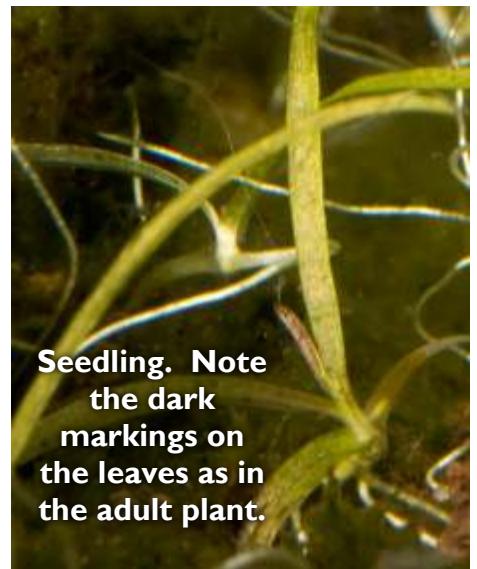


fertilization process was successful. I also noted that seeds were produced even when I didn't help pollination with my trusty paintbrush.

After removing all of the brown pulp the seeds were put on a bed of white sand in a sealed clear box with a relatively strong LED light above and then I waited. After three weeks no seeds had sprouted. My second try began a few days later. I used a small 6 inch cube aquarium putting a thin layer of dirt on the bottom of the tank and then sealing most of it with a 1/2" layer of white sand. I added about an inch of water and then sealed the top to eliminate as much evaporation as possible. In my greenhouse window it gets a much higher dose of light than I can ever produce in my fishroom with LED's.



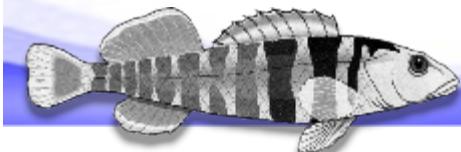
Seeds sprouting on a sand bed



Seedling. Note the dark markings on the leaves as in the adult plant.

Three weeks after this trial...Success! The seeds have now sprouted and the plants are about 2 inches tall and just starting to show the characteristic brown spots of the beautiful Okavango color form.





Water Hyacinth

Eichhornia crassipes

From Seed

By Gary Lange

I'VE HAD WATER Hyacinth in my pond every year for maybe twenty years now as it makes the best "Rainbowfish Mops". The rainbowfish would much rather breed in this than any artificial mop that I could offer them in a pond.

During a "normal year" my Hyacinths often bring a higher bid because people know they may contain some rare and interesting



Beautiful flower

eggs. With this COVID 2020 year and no auctions I've been doing more to produce some seeds of various plants, both indoors and out, including water hyacinth.

For the Water Hyacinth in particular I would like to grow my own so that I don't have to purchase plants from a pond store each year. Since pond stores often have plants in with goldfish or other fishes that can become a source of potential parasites. I treat as much of the plant as possible with Fenbendazole to hopefully remove



After bloom the flower stalk bends and submerges the seed pod in water.

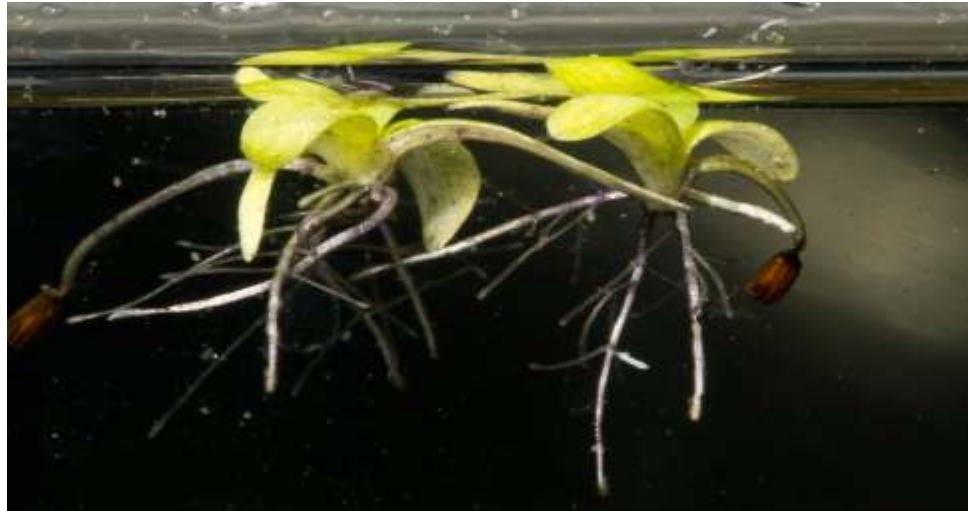


Utricularia gibba
intertwined in the roots

those animal parasites. However one pest, the carnivorous plant, *Utricularia gibba*, cannot be removed in this manner. This resulting mass of *U. gibba* is a major source of irritation in the pond some years and if I could grow my own Water Hyacinth I could eliminate this pest too.

I was lamenting to a friend that I never get any seeds from the hyacinth, that the flowers just wilt and die. She said take a closer look as it seemed to her that they were purposely putting the decaying flower stalk into the water. A little reading told me that's exactly what is happening.





After blooming for only a day or two the stalk makes a U-turn and bends into the water. After about a week the stalk starts to decay and at that time I could cut off the stalk and harvest the seeds.

I clean up the seeds and put them on a bed of sand with a layer of dirt underneath and place them in my greenhouse window and hopefully will sprout.

Three weeks later success!
Some of the Eichhornia seeds stay

stuck in the sand so I let them decide when they want to float to the surface.

Other seeds have already floated to the surface but are just underneath the slight film on top of the water. I guess they will have to produce more buoyant leaves or at least jettison the seed covering before they can totally break free.

With a little bit of luck I'll have parasite and *U. gibba* free water hyacinth blooming again in my pond by summer!



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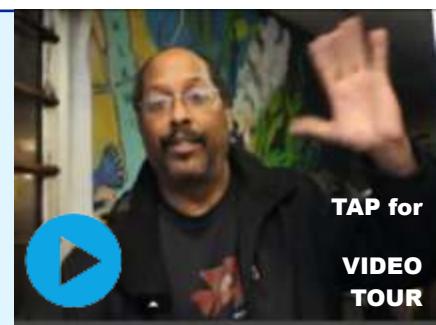


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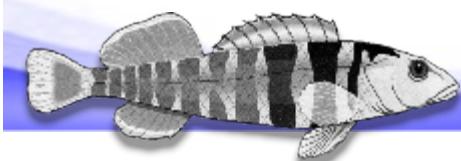
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Pogostemon stellatus

By Gary Lange

THE VARIETY DISCUSSED here is the original thin leafed variety that came into the aquatic hobby as *Eusteralis stellata* although it had previously been named *Pogostemon*.

This plant was moved back into *Pogostemon* in 1997, already over twenty years ago but can still be seen listed as *E. stellata* on some plant lists. At that time it was kind of the poster child plant for people who had "high tech" planted tanks. That meant lots of light, fertilizer nutrients and certainly CO₂. This species also graced the cover of the 2003 English version of Kasselmann's book.

I had failed miserably with this plant many years ago (early 2000's) when I wasn't using a lot of light on my aquarium. Since that time I have boosted my lighting and also use CO₂ in my seven foot tank. Unfortunately, when initially ready to grow this plant I was only able to find the larger, wider leaved version. This version really doesn't appeal to me though as much as the version with thin wispy leaves.



Pogostemon quadrifolius*, often mislabeled as *P. stellatus



The wider leaved version supposedly came from Papua, New Guinea so I may have to try both versions as I have a fondness for fish from that island. Another very deep red but also wide leaved version comes from Berry Creek in the Northern Territory of Australia and was discovered by David Wilson in 2018.

Recently I again found the thinned leafed version for sale on the Facebook page "Planted Tank Quick Auctions" and purchased it. The several images posted there assured me that it was the correct plant although I have seen another plant, *Pogostemon quadrifolius*, often misidentified and submitted even to our MASI auctions as *P. stellatus*. Several suppliers and others in the hobby have misidentified *quadrifolius* as *stellatus*. In my opinion *P. quadrifolius*, is as easy to grow as water sprite or *Vallisneria* but *P. stellatus* takes a bit more effort.

Upon receiving these plants I cleared out a spot and simply planted the cuttings with planting tongs- very long tweezers which help

when positioning any sort of stem plant cutting.

My Build My LED™ LED system is multi colored and provide a decent spectrum of light for my plants. The spectra on some lights seem to be better suited for growing algae.

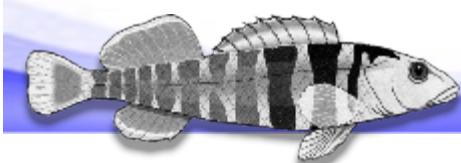
I use Seachem liquid fertilizers although dry fertilizers would do just as well. Seachem does a lot for the planted tank hobby so I support them by buying their products. I use Flourish, Nitrogen, Phosphorus, Potassium, Iron and Trace.

Under these conditions the *Pogostemon stellatus* stems grew and flourished and soon I was cutting them back and making more plants. They are quite easy to grow given the right conditions.

If you have a moderately high tech tank with good quality lights then you should give this plant a try.

Resources: Aquarium Plants by Christel Kasselmann, 2019





Utricularia gibba

By Gary Lange

AS THE SAYING goes "Friends don't let friends drive drunk! My adaption says "Friends don't give friends *Utricularia gibba* knowingly."

Unfortunately sometime this hitchhiker comes in on some of the plants produced by the aquatic plant nurseries. It came in this year on the Water Hyacinths for the pond and made for a horrible stringy mess. Hopefully our cold winter temperatures will eliminate it.

I have been exceedingly fortunate to get it into only one inside aquarium but it took two months to hunt down every last piece!

Yes, it's a carnivorous bladderwort but I'm not sure if the traps are big enough to catch even our smallest fry, but that's not the point. If you have a large nicely planted tank



this can take over. Questions have been asked on the planted tank pages about how to get rid of this pest where everything from burn the tank, quit the hobby and move have been suggested.

The idea of putting other plants in darkness to outlive this pest was also offered. I tried this with java moss that survives on very little light and *U. gibba* outlasted the low light treatment with Java moss so I'm doubtful the darkness treatment is going to be successful with other more light loving plants.

Removing *U. gibba* comes down to good old fashion patience, keen

eyes and sharp tweezers as the only way to effectively remove it. I would have taken a close-up image of one of the bladders but I was just too grossed out by all of that stringy mess.

The pond was a success in spite of the *Utricularia* as I had lots of *Rhadinocentrus ornatus* fry as well as *Pseudomugil mellis*. I did however not get a single *Chilatherina fasciata* fry.

They are a hair smaller so maybe....

Editor's note: Although Gary mostly covers the nuisance value of *Utricularia gibba* here, it's obvious it is an easily propagated plant. It is also nearly cosmopolitan in its worldwide distribution and is found everywhere in the United States except the Rocky Mountain states and Alaska.

As both photosynthetic and carnivorous plant, *Ug* gets nutrients in two ways: as a normal green plant from sunlight using dissolved nutrients from the water or from the digestion of small microorganisms and protozoans it traps within its bladders. The organisms trapped are readily digested and provide energy and the major nutrients including Nitrogen and other elements.

To propagate vegetatively, just add water- and it doesn't need much of that! *U. gibba* is a flowering plant but to get it to flower is much more difficult and rarely accomplished.

The stems fragment easily and plants regrow from each fragment like many other aquarium pest plants such as *Najas* or *Lemna* sp. This makes it extremely difficult to get rid of when acquired.

Although the jury is still out if the bladders of *U. gibba* are capable of ingesting any of the smaller fish fry, each bladder opening is ringed with small sensitive trichomes that trigger the

bladder to open and create vacuum when disturbed- similar to the actions triggered by the trichomes of the Venus Fly Trap.

REFERENCE: Wikipedia, Cosmos, other sources, personal communications.



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2020 BREEDER'S AWARD PROGRAM - Steve Edie



November 2020 - Parking Lot Swap

Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
Chuck Bremer	<i>Elassoma</i>	<i>gilberti</i>	Blue Pygmy Sunfish	20			1562
Steve Coxon	<i>Poecilia</i>	<i>reticulata</i>	Dark Blue Guppy	5			90
	<i>Xiphophorus</i>	sp. "Domestic Swordtail"	Red Swordtail	5			95
Jack Heller	<i>Fundulus</i>	<i>cinctus</i> "Pine Log Creek" *		10	5		810
Mike Hellweg	<i>Alcolapia</i>	<i>ndalani</i> @	Narrow Mouth Natron Tilapia	15		15	7535
	<i>Barbodes</i>	<i>semifasciolatus</i> *	Chinese Red River Barb	10	5		7550
	<i>Lepidiolamprologus</i>	<i>boulengeri</i>	Boulanger's Cichlid	10			7560
	<i>Xiphophorus</i>	<i>pygmaeus</i> "Rio Coy" *	Golden Pygmy Swordtail	10	5		7575
Mike Huber	<i>Ameca</i>	<i>splendens</i> #@	Butterfly Splitfin	0		10	3207
	<i>Hyphessobrycon</i>	<i>anisitsi</i>	Buenos Aires Tetra	15			3222
	<i>Phallichthys</i>	<i>quadripunctatus</i> #@	4 Spot Merry Widow	0		5	3227
	<i>Poecilia</i>	<i>reticulata</i> ^	Pingu Guppy	0	1		3228
Ron Huck	<i>Julidochromis</i>	<i>regani</i>		10			10
Randy Ison	<i>Apitogramma</i>	<i>cacatuoides</i>	Triple Red	15			330
	<i>Betta</i>	<i>rubra</i>	Red Banded Betta	15			345
	<i>Dario</i>	<i>dario</i>	Scarlet Badis	15			360
	<i>Scleromystax</i>	sp. "C113"		15			375
Cory & Lauren Johns	" <i>Xystichromis</i> "	<i>phytophagus</i> @	Christmas Fulu	10		10	20
Gary Lange	<i>Pseudomugil</i>	<i>mellis</i> "Kangaroo Creek" *@	Honey Blue Eye	15	5	15	2014
David Schmidt	<i>Xiphophorus</i>	sp. "Domestic Swordtail" #	Red Velvet Swordtail	0			5
Curtis Skouby	<i>Amatitlania</i>	<i>nanolutea</i>		10			170
	<i>Amatitlania</i>	sp. "Honduran Red Point"		10			180
	<i>Ancistrus</i>	sp. "Brown Bristlenose"		10			190
	<i>Ancistrus</i>	sp. "Super Red Bristlenose"		10			200
	<i>Limia</i>	<i>tridens</i>		5			205
Jason Wack	<i>Andinocara</i>	<i>pulcher</i>	Electric Blue Acara	5			5
	<i>Lamprologus</i>	<i>multifasciatus</i>	Multies	10			15

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



HORTICULTURE AWARD PROGRAM - Mike Hellweg

November & December 2020



Member	Genus & Species	Common Name	Type	Points
David Schmidt	45 points			
	<i>Hygrophila difformis</i>	Water Wisteria	V	5
	<i>Limnobium laevigatum</i>	Brazilian Frogbit	V	5
Gary Lange	1995 points			
	<i>Utricularia gibba</i>	Dwarf Bladderwort	V	5
	<i>Pogostemon stellatus</i> Thin Leaf	Water Star	V	15
	<i>Ottelia ulvifolia</i> Okavango Delta		IB	20
	<i>Eichhornia crassipes</i>	Water Hyacinth	S	10
	<i>Ottelia ulvifolia</i> Okavango Delta		S	20
Mike Huber	640 points			
	<i>Crinum calamistratum</i>	Waffle Leaf Bog Lily	V	20
	<i>Iris louisiana</i>	Ann Chowning Water Iris	V	10
	<i>Iris laevigata</i> Snowdrift	Snowdrift Water Iris	V	10
	<i>Sisyrinchium montanum</i>	Blue Eyed Water Grass	V	10
	<i>Zosterella dubia</i>	Willow Grass	V	10
Steve Coxon	65 points			
	<i>Ceratopteris thalictroides</i>	Water Sprite	V	5

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

American Killifish Association

2021 Convention

St. Louis, MO

June 11-13

aka.org

Pic © Tony Terceira



2020 Year End HAP Report

In spite of the long, strange year of 2020, our HAP was one thing that was nearly normal. We were close to normal numbers, had several new members participating for the first time, had several "old timers" participating for the umpteenth time, and had several awards earned.



Way to grow!

101 Submissions from 17 entrants represent 75 different species from 34 different families, 10 of which were Ariods, for several years now our most popular plant family. We did have a tie with *Hydrocharitaceae* also having 10 entries for the first time ever!

2020 contributed: 16 Outdoor Blooms 8 Indoor Blooms, 3 Seed Reproductions and 74 Vegetative Reproductions.

The most widely propagated species in 2020 was *Anubias barteri* once again, but this year tied with *Zosterella dubia* at 4 submissions each

The most frequently submitted genus in 2020 was *Iris*.

Participant	Points 2020	Submis-sions 2020	Total Points	Total Submis-sions	2020 IB	2020 OB	2020 Seed	Level Attained
Brian Woodrick	10	2	120	11				General
Bruce Mayhew	15	3	295	35				Senior
Charles Harrison	25	2	800	71				Grand Master
Chris London	85	6	285	21				* General, Advanced
Chuck Bremer	140	15	1405	136	1	8		Grand Master
Danielle Repp	5	1	5	1				
David Schmidt	45	7	45	7				
Gary Lange	115	8	1980	173	2		2	* Senior Grand Master
Holly Paoni & Kevin Wise	120	9	1895	159	2	1	1	* Senior Grand Master
Jack Heller	15	1	40	5				
Laura Morrison	25	5	45	6				
Megan Moncure	15	2	15	2				
Mike Hellweg	20	2	3780	321		1		Illustrius Grand Mstr
Mike Huber	175	18	640	65	1	5		Senior
Noel Roberts	20	2	815	81				Grand Master
Ryan Bush	110	8	135	11	1			* General, Advanced
Steve Coxon	70	10	70	10				* General

* = To be presented

All 2019 & 2020 HAP & BAP Awards will be presented at the First Awards Banquet the Missouri Aquarium Society is able to have after COVID.



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Malawi Aquatics	Florissant, MO	(314) 830-6460
Midwest Tropical Fish	Jerseyville, IL	(618) 946-7408
Pet Connection	St Louis, MO	(314) 773-7387
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2021 EVENTS

CLUB HOPPING Steve Edie

1/21 MASI-General Meeting St Louis, MO

2/21 QCFS-Feb Swap Davenport, IA

2/28 MASI-Winter Auction St Louis, MO

3/18 MASI-General Meeting St Louis, MO

4/15 MASI-General Meeting St Louis, MO

4/16-18 ALA-Natl. Convention Detroit, MI

5/1 MASI-Spring Swap St Louis, MO

5/1 MASI-2020 Awards St Louis, MO

5/2 MASI-Spring Auction St Louis, MO

5/20 MASI-General Meeting St Louis, MO

6/11-13 AKA-Natl. Convention St Louis, MO

6/17 MASI-General Meeting St Louis, MO

7/11 LEAC-Swap Belleville, IL

7/15 MASI-General Meeting St Louis, MO

7/22-24 ACA-Natl. Convention St Louis, MO

8/8 MASI-Summer Auction St Louis, MO

8/19 MASI-General Meeting St Louis, MO

9/16 MASI-General Meeting St Louis, MO

9/19 MASI-Fall Swap St Louis, MO

10/8-10 Cataclysm Madison, WI

10/21 MASI-General Meeting St Louis, MO

11/7 MASI-Fall Auction St Louis, MO

11/18 MASI-General Meeting St Louis, MO

12/16 MASI-General Meeting St Louis, MO

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Nearby Clubs linked to their logo



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

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



AKA 2021 National Convention

June 10-13 - St Louis, MO

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

Friday Show Set-Up

Saturday Speakers:

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

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

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

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

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



Saturday's Special

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

Saturday Banquet and Awards Program

Sunday Auction: 11 A.M.

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

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

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



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

Jack Heller & Mike Hellweg - Co-Convention Chairs

Emails: HellerJackL@aol.com
&mike@minifins.com



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Speaker Lineup:

Christophe



Donald



Richard



Dave



Glen



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

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

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

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



In 2021 make up for staying at home in 2020!

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

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

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



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RUSTY



PAM



STEVE



DAVE

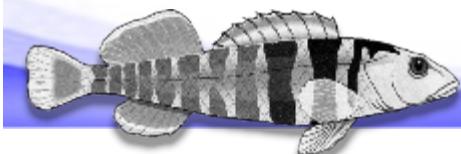


DON



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MEMBER CLASSIFIEDS

Wanted:

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

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

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



Available to a Good Home:



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

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

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

Contact: **Renee** - ren411eal@gmail.com

See a Tank you might like? Many remained after

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

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

- Email: PatTosie@yahoo.com



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



MEMBER CLASSIFIEDS (continued)



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

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

Both tanks come with glass tops and I will throw in gravel and either a Eheim 2215 or Fluval 403 Canister Filter with each tank.

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

Will empty tanks - Fish & plants not included.

There's still room for your ad here!!

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

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

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

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

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



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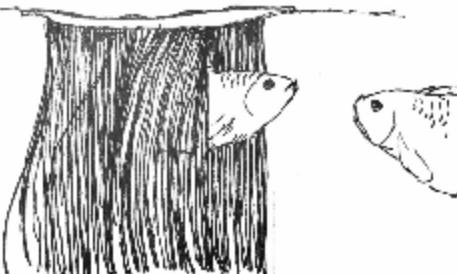
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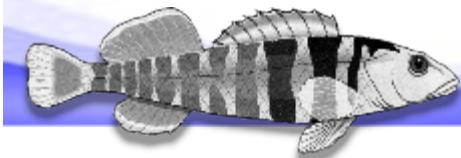
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**American Cichlid Association
2021 Convention**



St. Louis,
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July 23-25

convention.cichlid.org





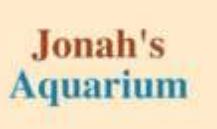
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