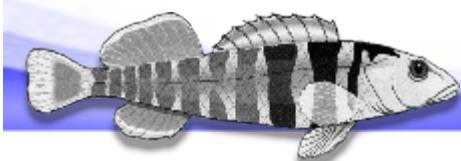


July/August 2022

V48#4

The **DARTER**





The DARTER

PRESIDENT

Mike Huber
1661 San de Dr
Festus, MO 63028
(314) 743-6392
Michael.I.huber@jci.com

VICE PRESIDENT

Steve Coxon
428 Breezewood Dr
Ballwin, MO 63011
(540) 230-3216
coxonsteve@hotmail.com

TREASURER

Scot Roach
1249 Fenton Ridge Dr
Fenton MO 63026
(407) 310-3816
scotroach@gmail.com

SECRETARY

Angela Hellweg
511 Sunward Dr
O'Fallon, MO 63368
(636) 240-2443
pugdog64@yahoo.com

EXECUTIVE COUNCIL

Caleb Pitman	Festus2014@yahoo.com	(636) 232-4461
Charles Harrison	Charles@inkmkr.com	(314) 894-9761
Gary Lange	gwlange@sbcglobal.net	(314) 412-7636
Justin Warnock	jubs13@gmail.com	(636) 626-1425
Pat Tosie	pattosie@yahoo.com	(314) 616-4316
Melanie Holmes	melanieholmes7158@yahoo.com	(636) 293-4161

Program Lead	Member	Contact Email	Phone
Auction Chair	Mike Hellweg	mhellweg511@charter.net	(636) 240-2443
Conven>Show Chair	Bob Watson	robertwmmrsh@yahoo.com	(217) 532-3238
Advert & Promo	Ian Eggert	ijEggert@gmail.com	(262) 391-2555
BAP Chair	Steve Edie	sredie@charter.net	(636) 922-4232
Corresp Secy	OPEN		
Exchange Editor	Steve Coxon	coxonsteve@hotmail.com	(540) 230-3216
Fish Rescue	John Van Asch	johnsfishy0731@att.net	(618) 604-7228
Flowers	Angela Hellweg	pugdog64@yahoo.com	(636) 240-2443
HAP Chair	Mike Hellweg	mhellweg511@charter.net	(636) 240-2443
Historian	Cory Koch	sithlid@gmail.com	(636) 278-0736
Hotel Liaison	Mike Hellweg	mhellweg511@charter.net	(636) 240-2443
Librarian	Mike Huber	Michael.I.huber@jci.com	(314) 737-6759
Membership	Bob Watson	robertwmmrsh@yahoo.com	(217) 532-3238
Points Tabulator	Kevin Wise	kevlar4677@hotmail.com	(618) 313-3263
Program Chair	Steve Coxon	coxonsteve@hotmail.com	(540) 230-3216
Refreshments	OPEN		
Social Events Coord	John Van Asch	johnsfishy0731@att.net	(618) 604-7228
Social Media	Kelly Watson	kellywatson33@yahoo.com	(217) 710-0086
Swap Co-Chair	Eric Bazzell	enbazzell@gmail.com	(217) 637-8155
Swap Co-Chair	Mitch Wendel	Mitch.Wendel87@gmail.com	(217) 710-9969
You Tube Manager	Ian Eggert	ijeggert@gmail.com	(262) 391-2555

MEMBERSHIP:

[join MASi](#)



Annual Voting membership in the Missouri Aquarium Society is \$15; annual Corresponding membership is \$10; both include 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 the membership chair.

EDITOR **OPEN** Editor@missouriaquariumsociety.com www.missouriaquariumsociety.com



Cover: Male Plakat Betta, by Steve Coxon



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Article Photos are provided by the Authors unless otherwise noted.

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





THE PRESIDENT'S MESSAGE

Mike Huber

I'm Mike Huber and I was elected as the new president for MASi starting in July.

I'm excited to be the President and want to try a lot of new and different things for the club. You will be seeing a lot of change hopefully for the better. If you have any ideas you see or would have the club try let me know. I'm always here to see what the club wants and needs.

I'm here to help the club grow.

Thank you all!

Sincerely,

Mike Huber

I would like to introduce myself to you.



HELP US GROW!



OPEN

FROM THE EDITOR

Lots NEW in this DARTER:

Look for:

☛ new Officers

☛ new Committee Chairmen

☛ new Members

☛ new Activities and Interactions

We're looking for a new DARTER Editor.

Are you interested or know someone who might be?

Contact either the President, Vice President or the Editor to explore.

Thanks for your help!



☛ new Programs

☛ new Sponsors

☛ new fish

☛ new Articles

☛ new BAP & HAP points

☛ new Nearby Events

☛ and MORE!

Content deadline for the 5th Darter of 2022 is Sept 6th!!

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



MASI 2022/23 Executive Council



MIKE HUBER



STEVE



ANGELA



SCOT



CHARLES



MELANIE



GARY



CALEB



PAT



JJUSTIN

Position	Name	Email	Phone
President	Mike Huber	Michael.1.huber@jci.com	(314) 737-6759
Vice President	Steve Coxon	coxonsteve@hotmail.com	(540) 230-3216
Secretary	Angela Hellweg	pugdog64@yahoo.com	(636) 240-2443
Treasurer	Scot Roach	scotroach@gmail.com	(407) 310-3816
Council	Charles Harrison	Charles@inkmkr.com	(314) 894-9761
Council	Melanie Holmes	melanieholmes7158@yahoo.com	(636) 293-4161
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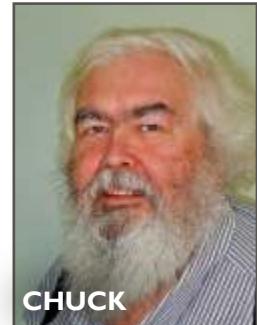
Darter Editor **OPEN** (Chuck Bremer): Editor@MissouriAquariumSociety.com



MIKE HELLWEG



BOB



CHUCK



MASI General Meeting: 7:30 PM CT, Thurs, July 21th, 2022!!



Scott Fellman: Tannins in Your Tank!



Scott Fellman is owner and "Chief Tint Officer" - of Tannin® Aquatics, Driven by Life, Fueled by Passion, and Inspired by Nature.

Scott's Says: "A lifelong tropical fish hobbyist, I suppose that I'm probably best known in the aquarium world as a reef aquarium author, lecturer, and aquatic industry entrepreneur. Prior to launching Tannin, I was co-owner of a popular marine livestock vendor, Unique Corals. Of course, my first love was freshwater, and I can't ever seem to stray from it."

Tannin Aquatics' story really began with my lifelong love for all things aquatic, and a vision to provide freshwater tropical fishes with the most natural captive environments possible. Environments with a certain look... A certain feel. A certain vibe. Earthy. Organic. Natural - Tinted."

The Talk: "Tannin" is derived from leaves and wood and tints the life-giving waters of tropical rivers and streams with a beautiful brown color that is so alluring. The dark waters, tangled roots and earthy-colored leaves found off the shores of tropical "blackwater" rivers, ponds, and streams can be replicated in our aquariums. We provide hobbyists with the products to use a carefully curated selection, along with information, inspiration, and appreciation for creating representations of the beautiful blackwater world that exists where land meets water.

You'll be shown how to use "aquatic botanicals" in aquariums, terrariums, vivariums, paludariums, and ripariums- where they offer unique aesthetics to help create memorable blackwater or brackish, "botanical-style" aquatic microcosms- different than is "currently popular" in the aquascaping world.



An unusual specimen of driftwood, exotic-looking aquatic botanicals, aquatic-themed art, or that crazy leaf, should get YOU excited, too. We've studied it for years. Romanced it. Curated it. Branded it. Loved it. Every item is scrutinized as if it were going into our own aquarium.



At MASI's NEW meeting location:

Jost Chemical Complex building:
8195 Lackland Road
St Louis, MO 63114

Follow the signs - Map on MASI's Website



MASI General Meeting: 7:30 PM CT, Thurs, August 18th, 2022!!



Justin Warnock: CO2 in the Aquarium, Part 1: Equipment!

This talk will cover CO₂ injection tools for planted tanks, from DIY systems to advanced pressurized systems.

We'll walk through the tools used for CO₂ injection of planted aquariums, starting with a DIY yeast and sugar set up and a recipe giving the best results without specialty yeasts. We'll discuss citric acid and baking soda methods before moving to disposable pressurized and paintball tank options and finish with traditional pressurized systems, expanded to more advanced setups such as multi-outlet manifolds.

Cases will be made for each system and highlight the equipment needed to safely operate each .

BIO: In the hobby since the late '90's in Seattle, I had dabbled with basic aquarium plants for several years. Around 2002 I began taking the Hobby more seriously and joined several local and international aquarium related groups. In the early 2000's I was the HAP Chairman of the Colorado Aquarium Society.

Upon a return to Seattle, then Club President and HAP Chairman, Roy Slettevold, gifted me a bucket of Safe-T-Sorb, a bag of filter sponge squeezin's, and a big bag of plants.

This kind gesture from a relative stranger turned the hobby into a new passion for me as the gift stipulated I participate in the HAP and re-submit these donated plants when successful. I had never seen Roy's plants except on the Internet or as magazine images and now had to figure out how to grow them!

Challenge accepted! I determined to make good on my deal with Roy and re-submit the plants to HAP. Fast several months and multiple Master Horticulturist awards later and I was able to reach the top of Seattle's HAP points leaderboard! Roy's simple act of kindness turned into an opportunity to learn something new and has kept me 'submerged' on the plant side of the hobby ever since.

Experience told me a carbon source was needed in the tank to succeed with some species. Since then, I have explored multiple methods of CO₂ injection and will share experiences, answer questions to ease any concerns others might have using CO₂ in planted tanks.

At MASI's NEW meeting location:

**Jost Chemical Complex building:
8195 Lackland Road
St Louis, MO 63114**

Follow the signs - Map on MASI's Website





MASI General Meeting: 7:30 PM CT, Thurs, September 15th, 2022!!

Rodet Rodriguez-Silva, PhD: Lake Miragoane, Haitian Paradise for Livebearing Limia!



BIO: A passionate fish keeper since childhood, Rodet has BS and MS in Zoology and Ecology from



the Univ. of Havana, Cuba and a PhD. in Biology from the Univ. of Oklahoma. He studies the ecology, evolution and taxonomy of Caribbean livebearing fishes. Recently including the study of *Limia*, an endemic genus of *Poeciliids* from the Greater Antilles, and the speciation patterns of *Limia* on Hispaniola, Jamaica and Cuba.

Rodet has led many expeditions in Cuba, Dominican Republic and Haiti. He keeps some rare endemic fish species in the US as part of his research projects and teaches several Biology courses at the University of Oklahoma and Oklahoma City Community College.



Limia garniari

Talk: Lake Miragoane in SW Haiti represents one of the most important radiation centers of Poeciliids within the Caribbean. There has been a lack of study of the distribution, of species present and of conservation status of Lake Miragoane fishes. This talk presents information about the ecology of the species collected in Lake Miragoane in 2019, the first study in over 40 years to capture the fish

diversity found there. He will discuss the most recently described *Limia* species from the lake: *L. islai* and *L. mandibularis*, and some of the conservation threats to the endemic species of Lake Miragoane that must be addressed to preserve the biodiversity of this important area.



Limia islai

At MASI's NEW meeting location:

**Jost Chemical Complex:
8195 Lackland Road
St Louis, MO 63114**
Follow the signs - Map on MASI's Web



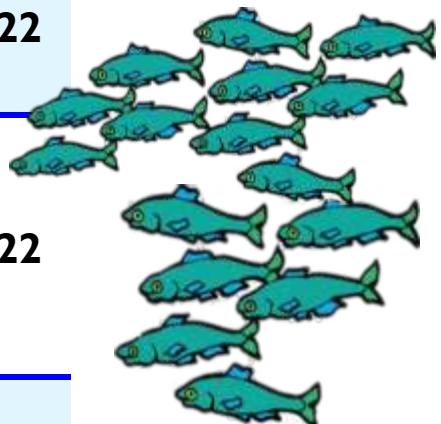
PROGRAM CHAIR'S CORNER

Steve Coxon



Speaker	Topic	Date
Scott Fellman	Tannins in the Tank!	7/21/2022
Justin Warnock	CO2 in the Planted Tank	8/18/2022
Rodet Rodriguez Silva	Lake Miragoâne Limia Project, MASI's 2022 Challenge	9/15/2022
Bob Hrabik	Native Fish Topics <i>Maybe his new book?</i>	10/20/2022
Balin Shaw	Aquascaping	11/17/2022
Christmas Party!!		12/15/2022
SLAKA*	Beginning Killifish	1/19/2023
Remy "Bahama" Llama	Reef Aquascaping	2/16/2023

MASI's Own Fish School



Programs will be In-Person at our meeting location:

Jost Chemical Complex
8195 Lackland Rd
St. Louis, MO
63114

And simultaneously streamed on MASI's Youtube Channel:



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

SEE YOU AT A MEETING SOON?

* SLAKA = St Louis Area Killifish Association



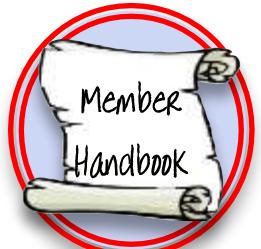


MEMBERSHIP CHAIRMAN

Bob Watson

MASI is still growing!

Austin Harmon	Union, MO
Larry Howell	Arcola, IL
Kok Zhi Lee	St Louis, MO
Jenny & Zach Paden	Lake Lotawana, MO
Charlie Perry	O'Fallon, MO
Emily Pupillo	St Louis, MO
Dejan & Michelle Veselinov	Columbia, MO
Randy Martin	St Louis, MO
David Steele	St Louis, MO
Jennifer Bullard	O'Fallon, MO



**Welcome
these new
Members!**

**since the
last Darter!**

MASI Membership!

The Missouri Aquarium Society's Annual Voting membership is \$15; an annual Corresponding membership is \$10; both include 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 Bob Watson, membership chair,



Email: robertwmrmsh@yahoo.com.



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





COUNCIL MINUTES

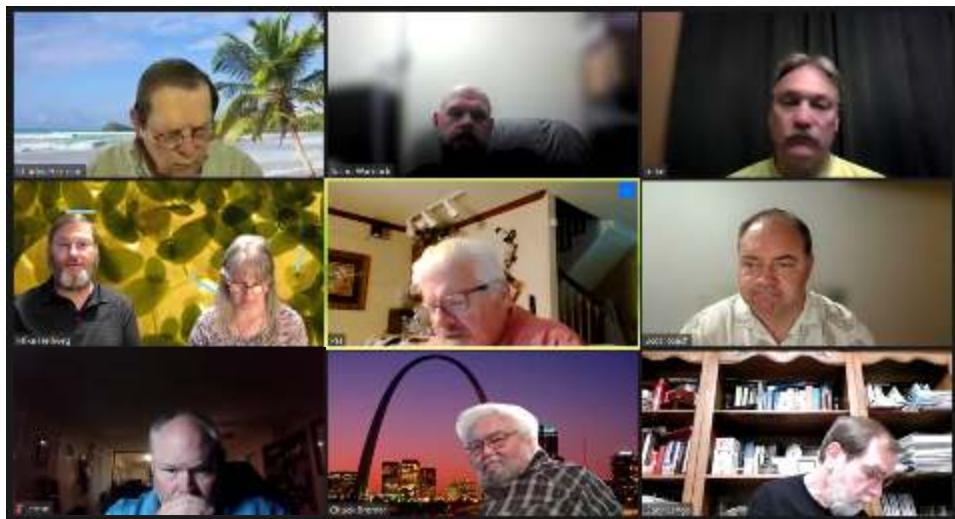
Executive Council

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 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!



COUNCIL MEETING

4/28/22

Pat Tosie called the Zoom meeting to order at 7:32. Present were Scot Roach, Angela Hellweg, Charles Harrison, Gary Lange, Mike Huber, Mike Hellweg and Chuck Bremer. Guests were Chris London and Justin Warnock.

ANNOUNCEMENTS

- ✓ The next Council meeting is May 26.
- ✓ The Spring Swap is Apr 30 and the Spring auction is May 1.

REPORTS:

- ✓ **SECRETARY:** Angela read the Minutes from the Mar meeting. A motion to approve was made by

Mike Hellweg and was seconded by Mike Huber. The motion passed.

- ✓ **TREASURER:** Scot read the Treasurer's report. A motion to approve the amended report was made by Mike Huber and was seconded by Charles Harrison. The motion passed.
- ✓ **EDITOR:** The deadline for submissions for the May/June Darter is May 10. It will be sent out on May 16.
- ✓ **SWAP:** 30 tables have been reserved so far.

OLD BUSINESS

- ✓ Pat said he has sent emails to those who haven't paid from the ACA convention.

Next Executive Council Meetings, many by ZOOM: at 7:30 PM:

August 4th, 2022
***Tentative Dates: Sept 1st, Sept 29th, Nov 3rd, Dec 1st, 2022**

- ✓ Mike said he plans to refile soon for 501 C (3) status.
- ✓ The MASiC Challenge is up to \$743.00 so far.
- ✓ A behind the scenes tour of the St Louis Aquarium isn't feasible at this time.
- ✓ Chuck said he will get with Robby Simmons to set up an email to members for them to print out their own MASiC membership card once they join.
- ✓ Possible future social events were discussed, a trip to the Illinois State Fish Hatcheries or doing member fish room tours again.
- ✓ Pat said he is now back on the MASiC bank account.

NEW BUSINESS

- ✓ Steve needs to know who will be running for 2022-2023 Officers and Council.
- ✓ The Carnivorous Plant Society has offered MASiC up to 5 free tables at their sales event on Jun 18. Setting up an information table with MASiC flyers was discussed.

A motion to adjourn at 8:23 was made by Charles Harrison and was seconded by Mike Huber. The motion passed.

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





COUNCIL MEETING 5/26/22

Pat Tosie called the Zoom meeting to order at 7:32. Present were Steve Coxon, Angela Hellweg, Eric Bazzell, Charles Harrison, Mike Huber, Justin Warnock, Caleb Pitman, and Chuck Bremer. Guests were Bob Watson and Mitch Wendel.

ANNOUNCEMENTS

- ✓ The next Council meeting is June 23.
- ✓ The deadline for Darter articles and reports is July 12.

REPORTS:

- ✓ **SECRETARY:** Angela read the Minutes from the Apr meeting. A motion to approve was made by Charles Harrison and was seconded by Mike Huber. The motion passed.
- ✓ **TREASURER:** A motion to waive the Treasurer's report was made by Mike Huber and was seconded by Caleb Pitman. The motion passed.
- ✓ **ADVERTISING:** Chuck is working on a MASi brochure.

- ✓ **AUCTION:** The next auction is Aug 7. In person reconciliation will be done again to speed up the process of getting auction check out.
- ✓ Some auction rule changes will be made by 2023.
- ✓ **MEMBERSHIP:** Nothing new has been done regarding online MASi membership cards.
- ✓ **WEBMASTER:** Charles will be updating the website.

OLD BUSINESS

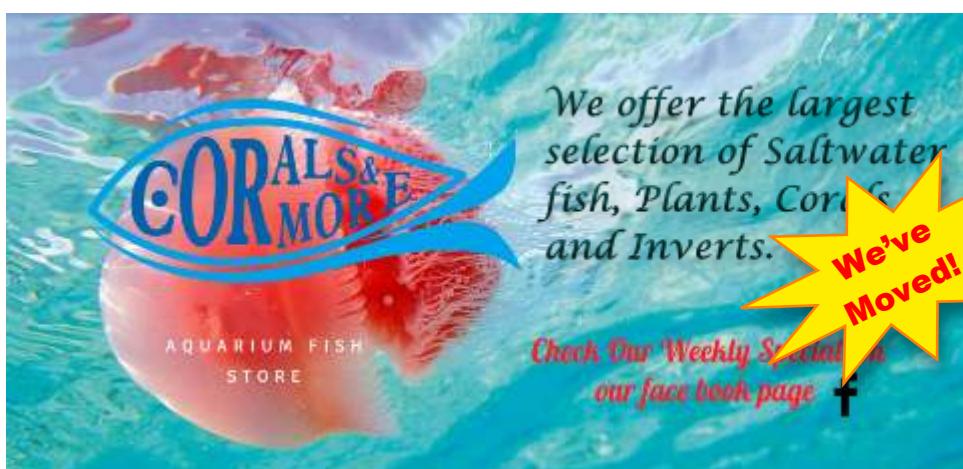
- ✓ The slate of candidates for 2022-2023 MASi Officers and Council are: President-Pat Tosie and Mike Huber, V President-Steve Coxon, Treasurer-Scot Roach, Secretary-Angela Hellweg, Council-Melanie Holmes, Justin Warnock, David Ferel, Charles Harrison, Gary Lange, Mike Huber, Caleb Pitman, Mitch Wendel, Ian Eggert, and Bob Watson. A motion to approve the slate was made by Caleb Pitman and was seconded by Mike Huber. The motion passed.

- ✓ MASi will have an informational table at the Carnivorous Plant Society's June 18 sales event.
- ✓ The table carts will be delivered to Jost Chemical soon.
- ✓ Mike Hellweg has ordered the trophies, but will be stepping down from this position after this year.

NEW BUSINESS

- ✓ Mike Hellweg will print the ballots for this years elections, but will need someone else to do this in the future.
- ✓ Council has decided to skip the Member of the Year award for 2021.
- ✓ Mike Huber brought up the possibility of having MASi auctions on Saturdays instead of Sundays. This will be discussed further when the auction chairman is present.
- ✓ A FORC meeting needs to be set up. Pat will contact those involved to set up a date and time.

A motion to adjourn at 8:38 was made by Charles Harrison and was seconded by Caleb Pitman. The motion passed.



Store Address:
6654 Mexico Road,
Saint Peters, MO 63376
PH: 636-387-1212
Hours of operation:
TUESDAY-FRIDAY 1:00PM-8:00PM
SATURDAY 11:00PM-8:00PM
SUNDAY 11:00PM-6:00PM
CLOSED MONDAY





MASI AUCTION MESSAGE

Mike Hellweg

First, and foremost, we are changing the split from 70/30 to 80/20 for ALL sales except for \$1 items, which will still be a 100% donation to MASI. Since Jerry Jost is donating the space to us (Thanks Jerry!), we no longer have to pay for the room and we no longer have to have such a large cut to cover this expense.

In addition, 5% of the total sales excluding donations, BAP and HAP will be donated to the MASI Challenge, to help boost our support of various fishy charities.

Also, as so many folks have been asking, we are going to try and have a food truck available for at least a couple hours during the auction to save folks from having to head out for lunch. This will only work if we can make it worth the food truck owner's while, so please support them!

Finally, in 2023 we are cutting one auction from the yearly rotation – after this year, we will no longer host a summer auction, which is always our smallest auction of the year. Instead, we will increase the number of swaps from 2 to 3. So, we will still have six events, but instead of 4 auctions and two swaps, it will be three and three.

And sellers, please note that to make it easier to keep track of things, your number 1 item will now automatically become your free move up item. That way we can more easily keep track of them and make sure they are all sold.

There are some more changes coming up in 2023, but to avoid confusion, I won't mention them until after the Fall Auction.

As always, we can use your help setting up, running and cleaning up after the auction.

And for now, 'nuff said,

Mike :

Auction@missouriaquariumsociety.com

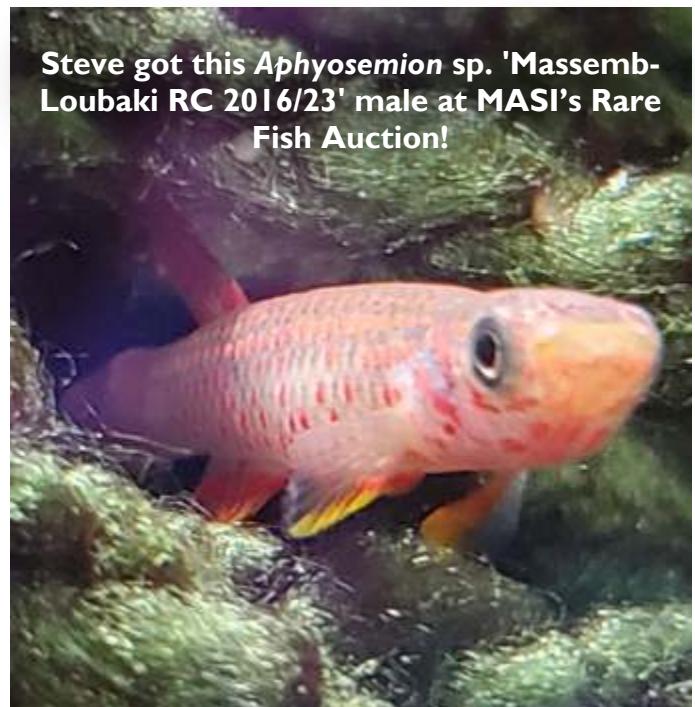


Summer Public Auction is August 7, 2022

Who knows, one might see Killies such as these from Steve Coxon's tanks. Come see what shows up!!



An *Austrolebias nigripinnis*, peat spawning Killie



Steve got this *Aphyosemion* sp. 'Massemb-Loubaki RC 2016/23' male at MASI's Rare Fish Auction!





CONVENTION/SHOW CHAIR

Bob Watson

place. Even better would be to put your confirmation and number in your party on the list at either the July 21st or the August 18th meeting to hold your place and allow us to plan properly. Cost will be \$30 per person as cash or check, payable the latest at the September 15th meeting...only 10 days before the event!!

All Awards for 2019, 2020 and 2021 will be presented at this Banquet. Nearly everyone should get something!

BAP & HAP plaques, trophies and cumulative awards

Hobbyist of the Year

Member of the Year

Writer of the Year

and other awards you may not yet be familiar with.

Scot says some will have Checks attached!

MASI wants to end 2022 unencumbered and move forward into 2023 exploring new territory.

For the FUTURE:

We are considering holding a MASI Spring Weekend again, with a full slate of educational speakers using both local and non-local experts.

Also under consideration is hosting another national convention.

Do you have other ideas that would help support our hobby in the area? Give me or others in the Council some feedback or volunteer to help us move forward and make the Hobby the best it can be!!

If you have questions, suggestions, want to volunteer to help or just to reserve early for the Awards Night, please contact me at email: RobertWmrmsh@yahoo.com , text or call: (217) 532-3238.

To do that , we are planning a MASI Awards Banquet for the evening after our Fall SWAP, September 25th, 2022. With the SWAP ending at 3:00 PM we should be able to rearrange the room and hold the Banquet at 5:00 PM with the Awards shortly thereafter so folks can get home to tank any fish they purchased at the SWAP.

We're really going to put our new MASI meeting place to the task, but it's up to it as we've already had similar events there.

There will be a Catered meal, no potluck this time!
Menu includes pork Madeira dinner with loaded mashed potatoes, vegetable, dessert and drinks all provided.

We ask all who plan to attend to commit by the September 15th meeting to hold their



M.A.S.I. Awards Banquet

September 25th, 2022

Following the SWAP at 5pm

Located at Jost Chemical's Building
8195 Lackland Road
St. Louis MO 63114

RSVP

With payment by the September 15th Meeting
to Bob Watson

\$30 per person

Includes Pork Madeira Dinner,
with loaded mashed potatoes,
vegetable, dessert,
and drinks



----- May & June Meeting Reports -----

May:



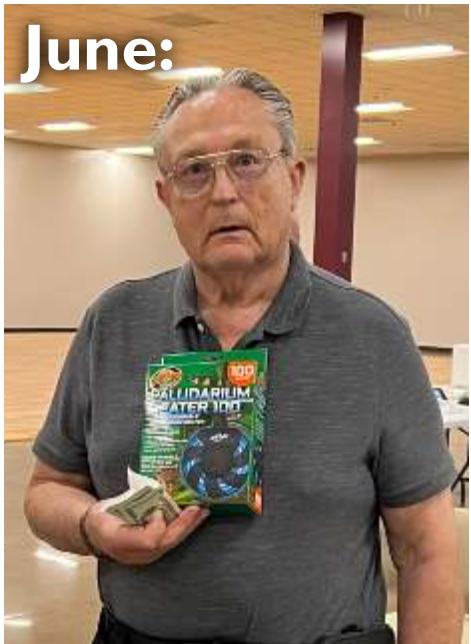
May & June

Raffle

winners won

Heaters, Fish Food
and Aqualights
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supporter **ZooMed.**

June:



Thanks to
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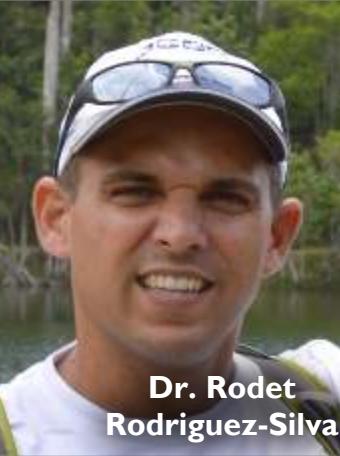
**GOAL:
\$2000+**

**Dr. Rodrigues-Silva,
manager of the Lake
Miragoâne project, will be
speaking to MASi in
September about that
project.** He will discuss the fish,



**Dr. Rodet
Rodriguez-Silva**

the Project's plans and needs. Since the 2017 ALA Convention in St. Louis, he has published a couple of papers describing two new species of *Limia* from Lake Miragoâne in Haiti including



Limia islae

1 cm

Limia islae (the Tiger Limia), *Limia mandibularis* and reconfirmed *Limia garnieri* from newly caught specimens.

Populations of Limias on Hispaniola are stable on the Dominican side, but the populations of several species on the Haitian side of the island have very limited ranges and may be in trouble. The project is just getting off the ground and an infusion of funding from MASi will be very helpful to keep it going.

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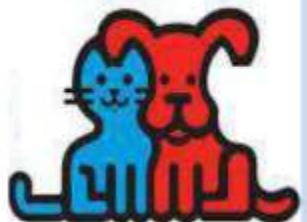
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Missouri Aquarium Society's Public Fish Auction Sunday, August 7, 2022



**~500+ Lots of Aquarium
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and all things Aquarium!!**

**Viewing 10:00 AM,
Auction Begins at
11:00 AM**

**Verbal & silent auc-
tions running until
about 4:00PM**

**Sellers must Pre-Register with
auction@missouriaquariumsociety.com. Members after 12:01
AM July 17, July 24 for Public.
Seller rules on MASI's
Webpage.**

**Free Buyer Number at
the Door!**



**5 Gallon
Complete
Bowfront
Raffle!**

**Public Events at Jost Chemical Complex:
8195 Lackland Road; St Louis, MO 63114**



**50+ Table Fish SWAP: Sunday,
September 25, 2022**

Buyers enter 12:00 Noon till 3:00 PM.

\$5 adults, Children Free!

\$3 after 1 PM

Make your best Deal!



**MASI has both Sellers and Buyers at many events.
All transactions at such events are strictly between those parties involved.**



Aquascaping Workshop

You're Invited!

Pre-Registration required

Melanie Holmes, professional

Aquascaper, will conduct a Nano Tank

Aquascaping Workshop Friday, Sept. 2, 5:30-7:30 pm at Art of Aquaria STL. Space limited to 15 participants- 'scaping outside, dress accordingly.

Melanie has conducted several hands-on aquascaping workshops for the Missouri Aquarium Society. She is highly decorated in recent aquascaping events sponsored by the Aquatic Gardener's Association and at Aquashellas where she won the Creator's Challenge in Chicago '20, and placed top three for the qualifying round of '21's Live Fluval Scape!! Melanie is on the OASE Aqua-gallery 'scape team for all Aquashellas.

Workshop participants may choose a 2 gallon cube or a 3 gallon long UNS rimless tank to Aquascape and keep. Tanks have appropriate lights, substrate, and \$50 in-store credit for hardscape and 30% off in store special plants for the Workshop.



Registration and \$90 material fee are required before August 21 at Art of Aquaria STL: 3131 Morgan Ford Rd, St. Louis, MO 63116. Open MTW: 5p-9p; TFS: 10a-9p; Su: 11a-6p. Contact info taken in case of rain reschedule.

Use Link below, this QR Code or sign up in store

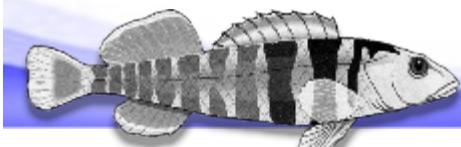


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Sponsored by Art of Aquaria and the Missouri Aquarium Society





Letter to the Editor:

Is it Time for another Revision?

From Thomas Keevin

I ALWAYS HAVE THESE really vivid, life-like dreams. Last night I dreamt that I was downtown (Lots of people, so it couldn't have been downtown St. Louis!).

Companies had tables set up in a plaza showing what they were working on. As I walked past one table with several attractive women I noticed that they were editing a copy of a new edition of William Innes' "Exotic Aquarium Fishes", yellow cover and all. I stopped to talk with them about the book.

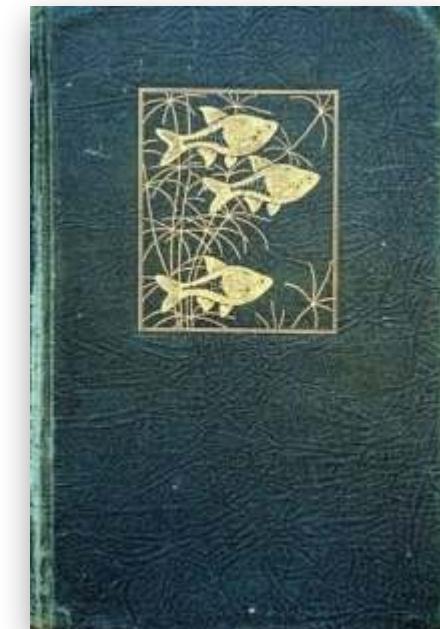
As I was talking to them, it dawned on me that I could interview them about the long history of the Exotic Aquarium Fishes and its history for an article in the Darter. I was asking them if they would be willing to do an interview for the article... but just then I woke up!!



So, I'm going to have to wait until tonight to find out if they are willing to do the interview. I'll let you know if I'm going to write the article tomorrow morning!!!

I had just seen an old copy of the book at an antique mall and then received an Editor's e-mail yesterday about another article. So, I guess these two events evolved into this dream.

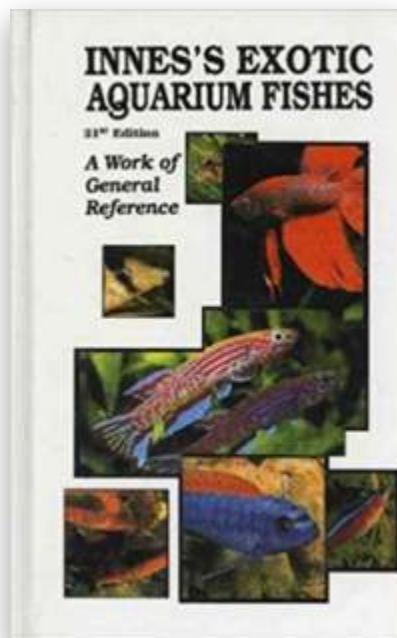
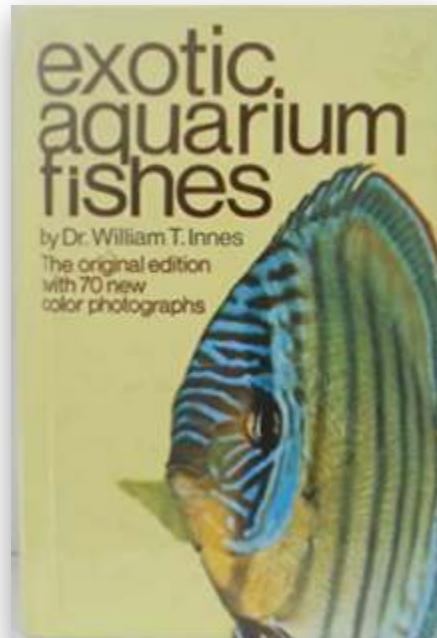
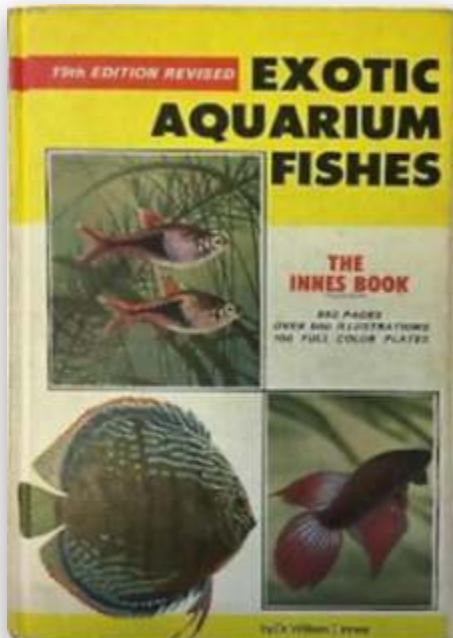
I'm not going to push and you can do what you want with my crazy dream(s) or publish this as is.

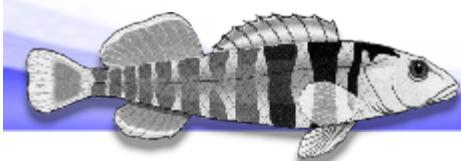


(I now feel like I'm Ernest Fishway, sipping on a bourbon on the rocks on my veranda in Cuba, going back and forth with my editor)

Tom

Editor's Note: One can never tell what will be worthy of publishing. I've been holding this excerpt from emails as a humorous aside nearly as timeless as the original book itself. Thanks for allowing me to publish it, Tom!





The DARTER

**The BIG and
the Little of it-**

**Two recent
spawns:**

***Buccochromis
rhoadesii* &**

***Nannostomus
trifasciatus***

By Mike Huber



Maximum length 16"
Photo © Imperial "Tropicals"

Spawning *Buccochromis rhoadesii*

Buccochromis rhoadesii is a large fish found in Malawi, Mozambique, and Tanzania. These fish were spawned in a 125 gallon tank. Temperature was 81F and I used well water. I'm sure the pH was very high. The *Buccochromis* where feed live food, frozen food, and a variety of high quality flake foods. For a treat they got earthworms. I netted the holding female and used a pipette to stripe the already free swimming fry from her mouth. The fry were put into a small tank and she was returned to the 125.



Africa



Maximum length 1.5"
Photo from Wikipedia

not a schooling fish, and the males have a territory.

The tank contained a false bottom that the eggs would fall through and the parents could not get to them. Fry were fed powdered fry food and paramecium culture, then crushed flakes and micro-worms.

Spawning *Nannostomus trifasciatus*

- the three line pencil fish or three stripe pencil fish

A 20 long was used to spawn these fish. One third tap water and two-thirds rain water was used and the temperature stayed around 78F by heating the room, not the tank. A sponge filter was used.

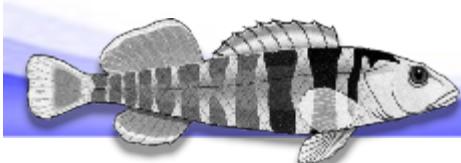
Irene and I fed the adults live food, chopped frozen food from a food processor, and a little flake food.

The tank had a lot of Java moss and Java fern for the fish to swim and play in. These plants also broke up the line of sight as these fish are a shoaling fish,



S America





Minifins

Neon & Cardinal Tetras

Paracheirodon innesi & Paracheirodon axelrodi

By Mike Hellweg, CFN
(Certifiable Fish Nut)

THE TWO "NEON" tetras, the neon and the cardinal tetra, have no lack of information.

There are entire websites dedicated to them in several languages, and there is even an entire book about the Cardinal tetra (Cardinal Tetras, TFH, 1980)!

In the past few years, color and fin variants have started to appear in the trade as well, in spite of the fact that the wild fish are spectacular in and of themselves. Folks always seem to want to improve on Nature.

We spent an entire article on the Green Neon Tetra since there is not a lot of information on them, but not



Cardinal & Neon Tetra Distribution in the Amazon

Paracheirodon axelrodi - Cardinal Tetra



Paracheirodon innesi - Neon Tetra



© Adrienne Legault

these two. My guess is that when the DNA work is finally done, the Green Neon, the Cardinal and the Neon will likely wind up being illustrations of convergent evolution, and not actually closely related to one another, as mentioned in the last article. One difference, Neons seem to have a distinct preference for cooler water in the low to mid 70s, while Cardinals are often found with discus in 80 plus degree water.

Both "neon" species will school in the classic sense, with cardinals taking it to extremes, swimming in basketball sized balls that fish collectors call bollinos as they move through the flooded forest, while neons hang around more loosely in groups. Both species are found in areas where the current is nearly still, as well as in

water that flows so quickly that it's difficult for a person to stand, so there doesn't seem to be any required preference for water movement.

Female Neons often reach about an inch and a half, while female Cardinals generally only hit about an inch and a quarter total length. Males of both species are a bit smaller. Sometimes there are whoppers out there, though- a couple years ago at Casimir's Aquarium in New Jersey I saw the largest Cardinal tetras that I have ever seen – easily nearly two inches (the width of a dollar bill) in total length! I would have bought some, but even at that spectacular size I couldn't justify almost \$30 each. I think about them when I look at the tiny inch long cardinals that wholesalers are calling "jumbo".





Both neon species have interesting histories in the hobby.

The Neon Tetra first entered the hobby in Germany between the World Wars. Six specimens were sent to Shedd Aquarium in Chicago on the ill-fated airship the Hindenberg on an early successful voyage. The lone survivor of that trip became the most popular exhibit in the aquarium.

As one version of the Cardinal story goes, the Cardinal Tetra was first brought to the attention of Dr. Herbert Axelrod by an old German priest near Manaus in Brazil, who sent it to Dr. Leonard Schultz to be described. About the same time, another collection was being described by Dr. George Myers as *Hyphessobrycon cardinalis*, and both publications came out at about the same time. After some interesting discussions, it was finally decided by the ICZN (the international body governing scientific naming) that Dr. Axelrod's publication was made earlier and thus had precedence. The name

became *Hyphessobrycon* (later moved to *Paracheirodon*) *axelrodi*.

If you would like to read more about this interesting turn of events, you can read the various different versions of the story in TFH magazine and in the book *Cardinal Tetras* by TFH. A summary of the story, written by Joe Ferenzi and Alan Fletcher, was reprinted in the April, 2020 COVID Exchange DARTER edition. Who said science was dull?

Regardless of how they entered the hobby, both Neons and Cardinals have been in the hobby for the better part of the last century. They are now raised by the millions by breeders in Europe, SE Asia, and even in the US. Most specimens you will find in local shops are bred and raised on farms.

Farm raised fish are no where near as picky as wild fish about their water parameters, so there is no need to make extreme adaptations to their water with the exception of trying to get them to spawn. Neons are so productive and have proved so easy to produce, that it is almost impossible to find wild caught Neon tetras in the trade.

Cardinals are produced by the millions in both SE Asia and in Europe, but there are still wild imports of Cardinals. The Peruvian and Brazilian trade in wild Cardinals is an important source of revenue for the fisher folk in these areas. As they say, "Everything is local". Without Cardinals, there would be little incentive for protecting the local habitat and the local fisher folk would likely turn to illegal mining or logging to make a living.

The Cardinal tetra fishery has been studied heavily for decades, and it turns out that not only does the collection of hundreds of thousands of wild Cardinals not hurt the population, it also helps to protect the habitat, other fishes, and even the people! If you want to find out more about how this is even remotely possible, look at the work of Project Piaba (<https://projectpiaba.org>).

When you get your Neons or Cardinals home, give them a good home, as they can live 4 or 5 years when well-cared for. While they're fine in community tanks, I think a

species tank with a nice sized school of them looks best.



A 20 gallon long is a perfect home for a school of a dozen to maybe 20 of either species. Set it up with a fine sand bottom, a pile of oak leaves, sticks, botanicals, and similar plant matter, a couple of pieces of driftwood, and a sponge filter.

Cardinals might need a heater as they prefer it around 78 to 80 degrees Fahrenheit, while Neons will be fine at room temperature around 72 – 76 degrees Fahrenheit. Neither species is shy, but neither is really fond of bright light. While you can keep them with plants or in planted tanks, a bio-tope correct tank would have lots of dead plant matter, but nothing green. This will impart a brownish tinge of tannins to the water, which will make them even happier.

Both are carnivores, and prefer meaty foods, but they're not too picky. Even wild fish will take flakes and pellets from the surface. Add frozen brine shrimp, bloodworms or something similar a few times a week, and if you want to try to breed them, add things like Daphnia and Grindal worms to their diet regularly. They mature quickly, and the farm raised juvenile fish you get from a shop should be ready to set up for spawning within about 6 to 8 months after arriving.





Both species need warm (78-80F), soft, acidic water with very low to no carbonate hardness (RO water works well). Filter it over peat for a week or so and then use it to set up the spawning tank. With soft, acid water and plenty of cover in the form of decayed plant matter, well-fed adults will do what comes naturally and you will start seeing spawning attempts in the tank. If you only want a few fry, that's pretty much all you have to do and soon you will see a few youngsters darting among the leaf litter near the bottom of the tank. When these little guys appear, start adding microworms or newly hatched baby brine shrimp at feeding time.

To produce a larger number of fry, you will need to separate the parents by sex and feed them heavily on live foods for a week or so. Put them together in pairs in small tanks (2-1/2 gallon tanks are perfect) with a pile of artificial spawning grass. Add the pair to the tank just before lights out.

They should spawn the next morning when the sun starts to come up. Remove the adults as soon as you see eggs. They will be done spawning, and will start eating the eggs if you don't remove them. Cover the tank with a towel and let the eggs rest. Keep things dark for a few days. They will hatch at about 3 days, and the whitish to glasslike fry will start making swimming attempts about 4 or 5 days after hatching.

Start feeding the young fry when they are all up and swimming in the water. For the first few days, foods like paramecia, infusoria, and finely powdered fry food like Sera Micron fry food. After about a week, they will be large enough to take microworms, vinegar eels, and San Francisco Bay strain brine shrimp nauplii. After a few more days, they will be large enough for Great Salt Lake Brine shrimp, and from then on,

CARDINAL TETRAS

BY DR. HERBERT R. AXELROD

**Herbert R. Axelrod
TFH Publications, 1980**

growth is rapid. The fry can be added to the parent's tank when they are about two months old, and from then, care is the same as for the parents.

Never forget to sit in front of the tank and spend time just watching and enjoying your fish!
After all, isn't that why we all got into this wonderful hobby in the first place?

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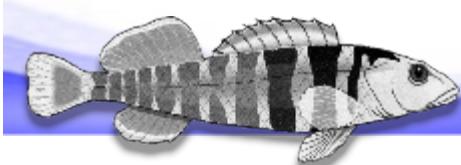
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Breeding *Apistogramma* *viejita*

by Bob Hargis

Reprinted from:

**Circle City Aquarium Club,
Indianapolis
(CCAC) Fancy
Fins Newsletter
March 2018**



APISTOGRAMMA VEIJITA IS another of the dwarf cichlids from South America. In particular, it is found in the Amazon River Basin in Columbia. Viejita is very similar to *Apistogramma macmasteri*, the males display nice red cheeks and red in the caudal fin.

I keep my Apistos in ten gallon tanks for a pair. My fish room stays around 75 to 80 degrees, although when the outside temperature hits extremes it may drop to about 70 or reach a high of 85. Optimal breeding temperature for the Apistos is 75 to 80.

My tap water is about 200 ppm, when breeding the Apistos I blend in RO water to drop the hardness to around 50 ppm.

They lay the eggs on the roof of small caves. I use either halved coconut shells, flower pots or commercially prepared cichlid caves. To condition my dwarf cichlids I feed them a variety of live and frozen foods with some quality flakes mixed in once

in a while. My foods of choice are daphnia, blackworms and frozen brine shrimp. I keep the pair together while conditioning.

When the female is ready to spawn she will display and attract the male to the cave. She will turn a bright yellow during the spawn and while guarding the eggs and fry.

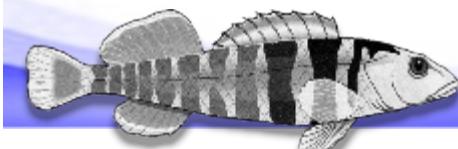
I usually try to pull the male after the eggs are laid. Some of my males will raid the cave and eat the eggs but usually I have found the

females to get aggressive and beat on the male. Once free swimming, the fry will follow the female around the tank.

They are big enough at this stage to eat newly hatched brine shrimp. I feed twice a day, the growth is slow with the fry reaching about half an inch in 60 days.

I usually pull the female at 30 days and set the pair up to spawn again. Subsequently 40% water changes on the fry is with my tap water so they acclimate to harder water.





**Neolamprologus
similis
Zebra
Shelldweller/Big
-Eyed Multi
by Catherine
Salmon**

Reprinted from:



**Hamilton &
District
Aquarium
Society,
Hamilton,
Ontario**

**(H&DAS) Bulletin
Newsletter
January 2021**

NEOLAMPROLOGUS SIMILIS is a dwarf cichlid endemic to Lake Tanganyika found along the shores of the Democratic Republic of the Congo. This Big-Eyed Multi is very similar to *N. multifasciatus*. The main difference is the colouring. *N. similis* has a gold body with vertical white stripes from the head to the tail, whereas *N. multifasciatus* has a white body and dark stripes. It also does not have stripes on the neck or head.

The *N. similis* is a freshwater shelldweller that will reach a size of 5 centimeters. As it originates in Lake Tanganyika, it prefers harder water in the low 8.0 pH range, with a temp in the mid 20's C. They are mainly a bottom to mid-tank dweller. They do not usually feed from the surface of the water but prefer sinking pellets and live foods.



I have always enjoyed the shell dwelling cichlids, not only because of their small size but because of how they interact with their surroundings. You may start with a flat layer of fine sand on the bottom of your tank and lots of empty shells but within a day or two you have lots of hills and valleys. *N. similis* will move the sand in their mouths from one end of the tank to another to protect their shells. It is a good idea to have more shells in your tank than *similis*. This gives them a choice of shell to choose from.

Sexing *N. similis* is not easy. The female is usually smaller than the male and other than maybe a few more stripes on the male, there is not a marked visible distinction. It is better to try and pick up a half dozen or more at first to get your colony going.

Generally, when you find *N. similis*, they will be sold in their shells. There are a few tricks to try and get them out of their shell, but I have found they don't work for me. LOL!

I picked up a bag of shells with their *similis* inside at an auction last fall. The bag said 6 fish plus shells and it wasn't until sometime later when the fish were comfortable in their new tank that I could see them out and about. I placed the shells/fish into a 15 gallon long tank with about a inch of sand on the bottom. A half dozen extra shells

were added to give the *similis* a choice of dwelling place. Java moss, small Java ferns and *Anubias nana* were also added. A medium-sized sponge filter was the form of filtration.

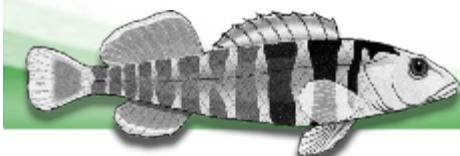
Within a few days, the sand had been moved around to the *similis'* liking. Feeding consisted of freshly hatched brine shrimp, micro worms and Northfin 0.5 mm krill pellet food.

I find that when you have a skittish fish like the *multis*, it is better to place the tank where there is the least activity in your fishroom. I just provided them with what they like: fresh water, lots of shells and good food.

It is hard to tell when they spawn, unless you happen to see both a male and female enter a shell. What you watch for is small specks around the entrance of the shell. If they seem to move and then hit the sand, they are probable fry. The female stays close to the fry and will signal them with the movements of her fins when it is safe or to return to the shell. I found that the fry enjoyed freshly hatched brine shrimp and Northfin fry starter.

I now have a nice colony of *N. similis*, with several dominant males, females, and a number of medium-sized offspring.





Missouri Native Plants for
Aquaculture

The DARTER

Heteranthera dubia

**Water stargrass,
stargrass, grassleaf
mudplantain**

By Micah Issitt

YOU MAY HAVE overheard someone in some Missouri pub say something like, “Hey, Missouri is lousy with Pondeteriaceae.” This botanically-inclined barfly was correct. The family Pondeteriaceae, sometimes called the “hyacinth” family, is unusually well represented in the state.

The most familiar of Missouri’s native Pondeteriaceae is *Pondertia cordata*, better known as



“pickerelweed,” a delightful perennial with glossy arrow-shaped leaves and spikes of purple flowers that is mass cultivated and sold to pond shops across the nation. Pickerelweed is a close relative of the “water hyacinth,” a South American-native floating plant that is extremely popular with pond-keepers and fishkeepers. This exotic aquatic is unfortunately invasive and destructive in many parts of the world, but is useful in temperate climates where cold weather kills all the remaining plants before they can become problematic. See the July, 2021 Darter for my article on this species.

The family Pondeteriaceae also has another fascinating genus, *Heteranthera*, which are sometimes called the “mud plantains.” When modern American consumers hear the word “plantain,” they most likely think of the “cooking banana,” a group of plants in the genus *Musa* that are quite similar to bananas, but are typically eaten cooked, rather than raw. One needn’t be a far-ranging gastrophile to know about the joys of the plantain. They were transported and cultivated from their original home in Southeast Asia to become a staple in African, Latin, and Caribbean cuisines.

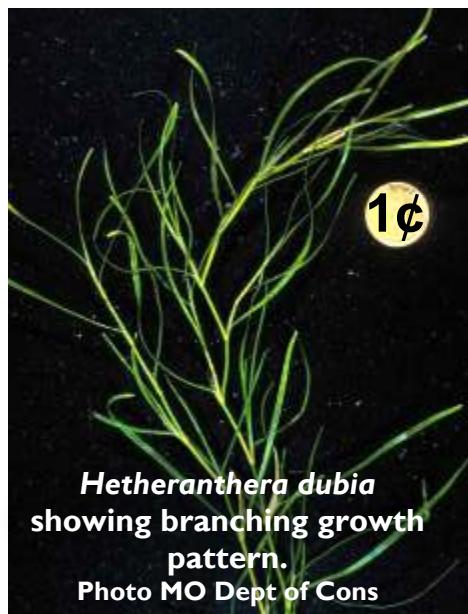
The most common species of the mud plantains are widespread and “weedy,” cropping up wherever conditions allow. In this case, the mud plantains colonize wet soil,

permanently flooded areas, and the banks of ponds and slow-moving streams.



***H. Zosterifolia* - Aquarium
“Stargrass”**
Phot: Dennerle

The so-called mud-plantains all belong to the genus *Heteranthera*, which has only nine species. Missouri, as it turns out, is a natural reservoir for six of those nine species, making the state an important haven for this fascinating group of plants. Members of this genus are quite widespread, ranging from the upper U.S. well into South America. For aquarists, the genus is well known for the popular aquarium species *Heteranthera zosterifolia*, commonly called “stargrass” or some variation on that theme. This useful species can be grown completely immersed or emersed and so has become common in aquascaping where thin-leaved grass-like structures are desired.



***Heteranthera dubia*
showing branching growth
pattern.**
Photo MO Dept of Cons





***H reniformis* -Kidney-leaf mud plantain**

Photo : aquaplantarumshop.it



***H limosa* - Blue Mud-plantain**

Photo: Wikipedia

Each of the species of *Heteranthera* appearing in Missouri are absolute gems for water gardeners, but most are unfortunately difficult to procure. Few of the native *Heteranthera* are widely cultivated and others are located only in highly specialized environments.

One member of the genus, *Heteranthera reniformis*, known locally as the “kidney-leaf mud-plantain,” has disappeared from much of its previous range and is considered critically endangered in Missouri and throughout much of the states. The plant’s disappearance is a great shame, as it is a lovely plant, producing dark green, semicircular leaves and white to blueish-white flowers twice per season (spring and fall). What’s more, *H. reniformis* is one of the only members of the species that doesn’t really need access to soil and will gladly float on the water, absorbing nutrients directly from the water column, which makes it an excellent alternative for floating plant cover.

Another wonderful species, *Heteranthera limosa*, sometimes called the “blue mud-plantain,” is frustratingly difficult to locate, despite being quite common through the state. The species likes water that’s quite shallow, just a few centimeters deep, and its leaves rise like hands in prayer above the water surrounding small flowers that are powder blue and serene. A dense stand of *H. limosa* looks incredible in bloom amongst other marsh species like *Rudbeckia fulgida*, the “orange cone flower,” an aster that loves rich, loamy soil and

produces vibrant orange-yellow flowers in profusion. One reason that *H. limosa* is difficult to find horticulturally, is because it is an annual that must be grown from seed each year. This is not difficult, and the plant will self-seed in a well-silted pond, but this makes it somewhat more difficult to cultivate and limits its utility as a water garden standard.

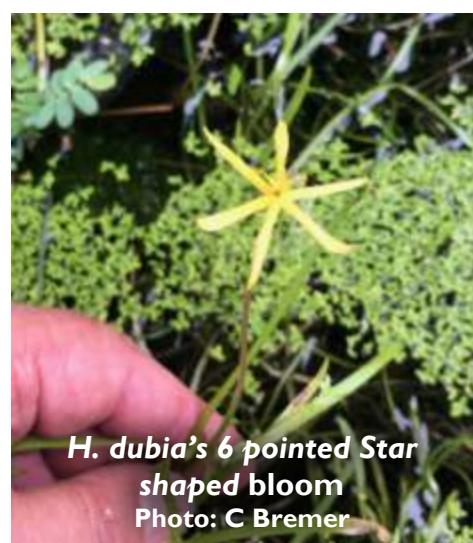
The one species in the genus that can be readily located and that does quite well in a wide variety of aquatic gardening situations is *Heteranthera dubia*, commonly known as “water stargrass,” or as the “grass-leaf mud plantain.” This beautiful plant is an aggressive survivor, colonizing areas that other members of the genus could not and spreading quickly when it finds suitable environs.

Though it is called a “grass,” the plant has no relation to the grass family (*Poaceae*), but does produce narrow, thin, grass like leaves along its stems. Above water, these fleshy stems tend to lie somewhat flat, but under the water’s surface, the leaves rise and sway in the currents very much like tufts of grass. The flowers arise directly from the leaf axils, rather than from dedicated stems, and contain six yellow petals. Flowers typically appear anywhere from June to September, but flowering is limited in deeper water. The flowers each only last a day, which makes the appearance of the delicate yellow blooms something special in the garden.

What makes *H. dubia* especially notable for water gardeners is the fact that this plant adapts readily to

tropical or subtropical growing conditions, and to life in the aquarium.

Aquarium-raised *H. dubia* do not provide anything that cannot be found in other similar species and the plant may look rather unassuming in aquarium environments, forming bunches of wavy, fleshy leaves under the water’s surface. However, the plant spreads quickly in shallow aquaria with warm water and *H. dubia* is useful in filling in larger areas where dense green is needed. The plant is excellent for use in paludariums, where the aquatic version of the plant can exist next to partially emerged and even fully emerged forms. With sufficient light and nutrients, *H. dubia* will bloom in the paludarium or shallow aquarium where the leaves break the surface.



H. dubia's 6 pointed Star shaped bloom

Photo: C Bremer

For pond keepers, *H. dubia* offers many different options. The plant will grow well on secondary or



primary plant shelves, and will spread readily in silted ponds or in baskets.

We tend to use mud as the primary substrate, mixed with and then capped with sand to preserve water quality, but otherwise unadulterated. *H. dubia* is not demanding nutritionally, and so there is little need to provide ground leaf-litter or any other additive. Low-nutrient aquatic soil works well enough. Where the edges of the pond are sloped, *H. dubia* often climbs the sides and stretches out onto the banks, as long as the soil is wet enough for the plant to find easy purchase.

For those who manage to get *H. dubia* flowering, either on the banks of a pond or in the aquarium, it is common to find flowers that emerge from the plant but never fully seem to open or to come into bloom. These special floral structures are called “cleistogamous” flowers, from the term “cloister,” meaning “marriage,” or “monogamy.” These cleistogamous flowers fertilize themselves, a feature

found in many other plants as well, and then produce huge amounts of tiny seeds. These seeds can be sprinkled into the edge of a pond or stream, where many will soon sprout bunches of grassy leaves.

One of the great things about growing native species in the aquarium is that the species can be transplanted from the aquarium to the backyard garden, then back again, then back again, creating a link between the indoor glass gardens that aquatic gardeners create, and the water gardens in our yards.

We regularly harvest *H. dubia* from the edges of our ponds before the fall, then grow them indoors over the winter, in our aquaria. When they get a little overgrown, rather than trashing the excess, the cuttings can simply be put back outside. Here, *H. dubia* and the other mudplantains provide a great deal to the semi-aquatic ecosystem. Tangles of watergrass are prime locations for fish fry and new born invertebrates, and many species of

butterflies, flies, and moths have been found feeding on watergrass.

Whether indoors or out, Missouri's mudplantains are one of the hardiest and most versatile options for water gardeners looking to cultivate native species and aquarists in the region are encouraged to substitute this grassy-alternative for some of the other, foreign grass-like species used in similar roles, like the South American *H. zosterifolia* that is more frequently cultivated and sold to aquarium gardeners.

By keeping and cultivating native alternatives, aquarists and water gardeners turn their gardens into further reservoirs for these species, and encourage greater appreciation for the many species that populate Missouri's wild waterways and wetlands.



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Plantago major & related species

White Man's Foot, Common Plantains, Fleaworts

By Micah Issitt & Adrienne Legault

THERE IS, HOWEVER, another kind of local plantain, a cosmopolitan group of generally non-aquatic plants in the genus *Plantago* that have spread with humanity all around the world.

In Missouri, and in many other states, *Plantago* species are just one of the many difficult-to-eradicate weeds that plague lawns and gardens. They can grow nearly anywhere, from the cracks in a slab of concrete with only the slightest hint of anything resembling soil to trampled clay paths with dirt as dense as stone.

The most common of these species in North America are also believed to be invasive Europeans or Eurasian plants. Though this introduced botanical is not nearly as malignant an introduction as smallpox,



slavery, and agricultural monoculture, it is yet another relic of the way that European colonialism changed the ecology of the world.

The common name for these weeds, "plantain," is from the Latin "planta," which means "footprint" and it was long believed that the plant spread when seeds got caught up in the mud-caked boots of travelers. This is the observation that gave the species "Plantago major" the common name "White man's foot" among some indigenous Americans, as it was thought that the European colonists left the plant in their footprints as they trampled the landscape. This common wisdom is likely based on accurate observations as the *Plantago* produce thousands of tiny seeds that will most definitely get caught up in the treads of a pair of boots or sneakers and will hitchhike to the next patch of dirt.

While Missouri lawns are often invaded by the European narrow-leaf plantain (*Plantago lanceolata*) and the common or broad-leaf plantain (*Plantago major*), the state also has its own native representatives of this common group, including the reedseed plantain (*Plantago rhodosperma*), which produces an attractive crown of seed heads that look almost like the crowns of cacti, rising above low growing leaves.

What makes *Plantago* species so successful is the same quality that all "weeds" have in common, a characteristic known as "plasticity." This indicates these plants are better

able than others to change their growth habit and strategy to respond to environmental variables. If they grow in sheltered environments or are lucky enough to sprout in rich, loamy soil, they can grow tall and develop large, broad leaves. But they scoff in the face of difficult growing conditions, thriving even where most plants would fail to take root.

Their foliage can be nearly completely shredded, they can be trampled flat, or they can be cut back to their base, and they will still return. I fear if they develop sentience, the human race is finished.

Also interesting about these post-apocalyptic survivor plants is that they are nearly all completely edible! Young leaves can be eaten raw, seed heads can be cooked and sautéed like vegetables, and older leaves will substitute for leafy greens like spinach!





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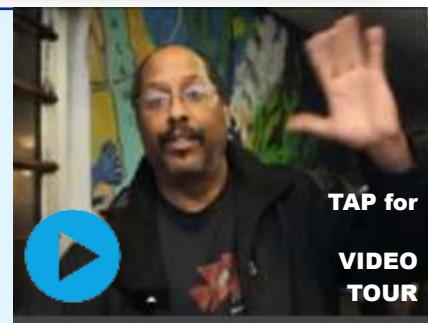


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2022 BREEDER'S AWARD PROGRAM - Steve Edie

BAP: May 2022



Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
Steve Coxon	<i>Betta</i>	<i>rubra</i>		15			335
	<i>Hemichromis</i>	<i>exsul</i>	Turkana Jewel	10			345
Mike Huber	<i>Corydoras</i>	<i>metae</i>	Bandit Cory	10			4316
	<i>Corydoras</i>	<i>panda</i>	Panda Cory	10			4326
	<i>Enneacanthus*</i>	<i>glotiosus*</i>	Blue Spotted Sunfish	10	10		4346
	<i>Lepomis</i>	<i>microlophus*</i>	Red Ear Sunfish	10	5		4361
Caleb Pitman	<i>Goodea</i>	<i>gracilis</i>	Slender Goodea	10			958
	<i>Limia</i>	<i>tridens</i>		5			963
	<i>Melanotaenia</i>	<i>sp. "Malanda"*</i>	Malanda Rainbow Fish	10	5		978
	<i>Pseudomugil</i>	<i>cyanodorsalis</i> @	Neon Blue Eye	10		10	998
Bob Watson	<i>Ilyodon</i>	<i>whitei</i> #@		0		10	661
	<i>Poecilia</i>	<i>sp. "Domestic Molly"</i>	Black Lyretail Molly	5			666
	<i>Skiffia</i>	<i>francesae "Sayula" #@</i>	Golden Skiffia	0		15	681
	<i>Xenotoca</i>	<i>lyonsi</i> #@	Red Tail Goodeid	0		10	691
Mitchel Wendel	<i>Goodea</i>	<i>gracilis</i>	Dusky Splitfin	10			210
	<i>Heterandria</i>	<i>formosa</i>	Least Killifish	5			215
	<i>Thorichthys</i>	<i>meeki</i>	Firemouth Cichlid	10			225

BAP: June 2022

Member	Genus	Species	Common Name	PTs	Bonus	CARES	Total
Charles Harrison	<i>Goodea</i>	<i>atripinnis</i>		10			3060
Mike Huber	<i>Aulonocara</i>	<i>stuartgranti "Maleri"</i>		10			4371
	<i>Lepomis</i>	<i>marginatus*</i>	Western Dollar Sunfish	10	5		4386
	<i>Lepomis</i>	<i>miniatus*</i>	Red Spotted Sunfish	10	5		4401
	<i>Lepomis</i>	<i>punctatus*</i>	Green Spotted Sunfish	10	5		4416
	<i>Xenotoca</i>	<i>doadrioi</i> #@	Redtail Splitfin	0		10	4451
Bruce Mayhew	<i>Hemichromis</i>	<i>exsul</i>		10			467
	<i>Neolamprologus</i>	<i>leleupi</i>		10			477
Holly Paoni &	<i>Danio</i>	<i>rerio</i>	Leopard Danio	5			1262
Keviin Wise	<i>Hemichromis</i>	<i>exsul</i>	Turkana Jewel	10			1272
Caleb Pitman	<i>Poecilia</i>	<i>gilli "Madre de Dios"*</i>	Costa Rican Molly	5	5		1008
	<i>Xenotoca</i>	<i>doadrioi San Marcos"@@</i>	Red Tail Goodeid	10		10	1028

BAP Key:

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

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

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2022 HORTICULTURE AWARD PROGRAM -

March & April, 2022

Mike Hellweg



Member	Genus & Species	Common Name	Type	Points
Holly Paoni & Kevin Wise	225 Points			
	<i>Didiplis diandra</i>	Caterpillar Plant	V	15
	<i>Echinodorus cordifolius</i>	Radican Sword	V	15
	<i>Ludwigia sp. Atlantis</i>	Dark Orange Ludwigia	V	10
Justin Warnock	600 Points			
	<i>Alternanthera reineckii Mini</i>	Mini AR	V	15
	<i>Bacopa monnieri variegatus</i>	Variegated Moneywort	V	10
	<i>Bolbitis difformis Mini</i>	Mini Water Fern	V	10
	<i>Cryptocoryne parva</i>	Pygmy Crypt	V	15
	<i>Hemianthus glomeratus</i>	Amano Pearl Grass	V	15
	<i>Hygrophila pinnatifida</i>	Feather Leaf Hygro	V	20
	<i>Limnophila aromatica</i>	Aromatic Figwort	V	10
	<i>Lindernia sp. India</i>	Indian Lindernia	V	15
	<i>Lindernia rotundifolia</i>	Watermelon Plant	V	15
	<i>Ludwigia ovalis Pink</i>		V	10
	<i>Ludwigia palustris Super Red</i>	Mini Super Red Ludwigia	V	10
	<i>Marsilea hirsuta</i>	Hairy Four Leaf Clover	V	15
	<i>Mayacca sellowiana</i>	Starburst	V	20
	<i>Microsorum pteropus needle leaf</i>	Needle Leaf Java Fern	V	10
	<i>Nymphoides hydrophylla taiwan</i>		V	20
	<i>Pogostemon helferi downoi</i>		V	15
	<i>Pogostemon stellatus</i>	Octopus Plant	IB	20
	<i>Pogostemon stellatus</i>	Octopus Plant	V	15
	<i>Riccardia chamedryfolia</i>	Coral Moss	V	10
	<i>Riccia fluitans</i>	Crystalwort	V	10
	<i>Rotala macrandra</i>	Mini Butterfly Rotala	V	15
	<i>Rotala rotundifolia H'Ra Gia Lai</i>		V	15
	<i>Rotala rotundifolia Vietnam H'Ra</i>		V	15
	<i>Rotala rotundifolia Green</i>	Green Rotala	V	15
	<i>Rotala sp. bossii</i>		V	15
	<i>Staurogyne repens</i>		V	20
	<i>Vallisneria spiralis Tiger</i>	Tiger Val	V	5
	<i>Vesicularia ferriei Weeping</i>	Weeping Moss	V	5



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



2022 SCHEDULE & CLUB HOPPING

Steve Edie



Date Group 2022 Events

7/16/2022	CAFE	Summer Auction - Urbana, IL
7/24/2022	GWAS	Greenwater Summer Swap - Joliet, IL
7/27/2022	LTFC	7/27-31, Aquatic Triple Crown - Louisville, KY
8/7/2022	MASI	Summer Auction - St Louis, MO
8/6/2022	AQUA	8/6-7 Aquashella, Dallas, TX
8/13/2022	HAAS	Summer Swap - Kansas City, MO
9/4/2022	CCAC	Fall Auction - Indianapolis, IN
9/10/2022	TCTFS	Fish SWAP - Bartonville (Peoria), IL
9/18/2022	GCCA	Tropical Fish Swap - Hoffman Estates, IL
9/23/2022	KOI	9/23-25 Koi Show & Pond Expo- St Louis, MO
9/23/2022	KeyC	9/23-25 Keystone Clash - Morganford, PA
9/25/2022	MASI	Fall SWAP - St Louis, MO
9/25/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
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
10/8/2022	AQUA	10/8-9 Aquashella, Chicago, IL
10/8/2022	HAAS	Fall Auction - Kansas City, MO
10/30/2022	GCCA	Tropical Fish Swap - Hoffman Estates, IL
11/6/2022	MASI	Fall Auction - St Louis, MO
11/6/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
11/18/2022	OCA	11/18-20, OCA Extravaganza 2022 - Strongsville, OH
12/4/2022	GCCA	Tropical Fish Swap - Hoffman Estates, IL

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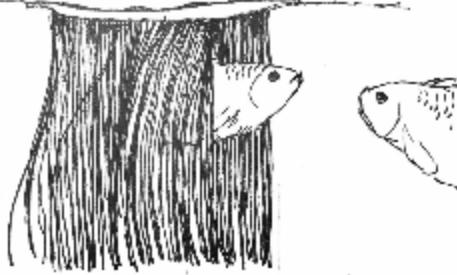
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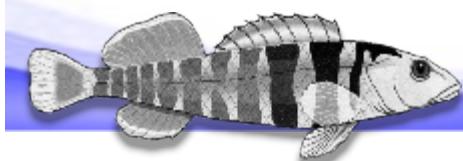
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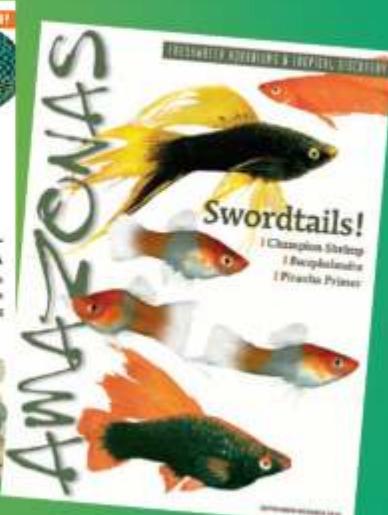
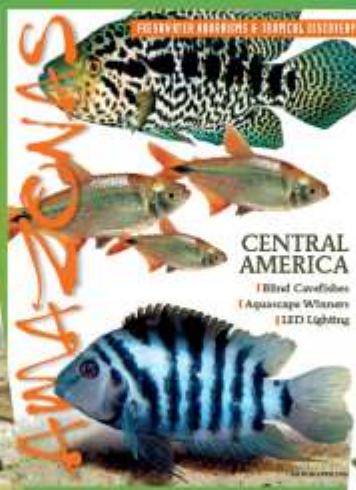
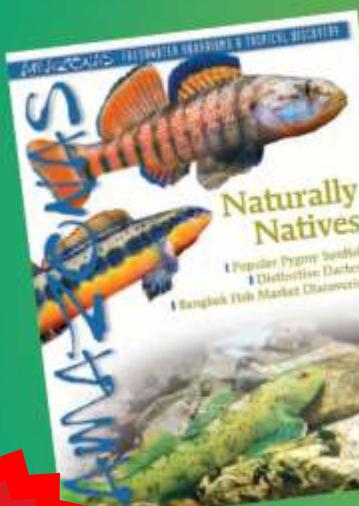


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