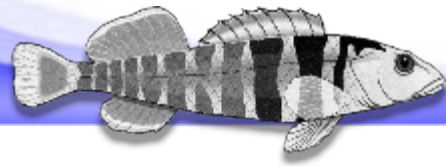


The **DARTER**



V47#5

September/October 2021



The DARTER

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THE DARTER

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Annual membership in the Missouri Aquarium Society, Inc. is \$15 and includes an electronic subscription to The Darter. Published six times per year.

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

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



**Cover - *Betta uberis* male
on a snail hunt
© Steve Coxon**



INSIDE THIS ISSUE



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





Ok, I've learned a lot creating this issue, and I hope you will too!

There is a lot of interest in our club in outdoor tubs, ponds and water features! This issue features many of those by the response from member authors and the photos and articles submitted for publication and one might see that as an underlying theme this month.

Outdoor aligned articles in this issue: How to build an outdoor Pond, using tubs effectively, outdoor tub breeding, select pond plants and HAP seed production in outdoor ponds.

Our speaker in September also contributes to this theme!

MASI is wrapping up some National meetings in St Louis with the American Cichlid Association's 2021 National Convention that was close on the heels of the AKA in June. See the wrap up photo session to see what some of the hubub was about. ...you had to be there to get the full flavor, tho!

The Challenge has turned a milestone and surpassed the \$2000 mark! It was the return to F2F programs that allowed many to donate and accellerate that program. Thanks to all who have helped so far. This cause continues for four more months so you still have a chance to contribute. Our August speaker donated his entire expense check back to this worthy cause...what can you do?

Did you miss the Fish Bucks Auction and FUN Night. Low attendance because of the resurgence of the pandemic but those who were there had loads of fun!

Unfortunately the awards were pushed back by our local supplier and weren't available but will be awarded at a future MASI General Meeting. There should be at least three \$100 checks to be give to worthy members so you'd better attend the meetings just in case! It is always a suprise to many when they receive their accumulated BAP or HAP awards/plaques/trophies at these presentations and for sure a surprise for many of the other awards too.

FYI: At least two of the award checks awaiting presentation are for Prize Winning articles in past Darters. Maybe there's another prize winner in this issue for someone next year? ... or you could be the proud author of a prize winning article you are yet to write for the November issue. Better start writing...

Content deadline for the last Darter of 2021 is November 9th.

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



Editor's Note: If you write for MASI's Darter one never knows what that might bring. You will see a welcome

new article by MASI's immediate past Editor, Mark England, in this issue. An Exchange editor picked up one of Mark's articles from 2016 and asked me to run him down to deliver his reprint. I found that Mark is still living in Nashville, TN and he sent me this information:

Hi ya, Chuck! Great to hear from you. I am enjoying retirement in Nashville. Both my kids, my grandson,

and granddaughter on the way are here.

I sold all my aquarium stuff (except for a couple of 10 gal tanks) before we moved. I went without a tank for a couple of years and set up a 75 gal planted tank during the Pandemic.

I went all out trying all the latest and greatest products and technologies I had never done before - Chihiros high power LED light, CO2 system, Oase filter with built in pre-filter and heater, and Fluval Stratum substrate. I tried tissue cultured plants. I got tetras I've never had before - Candy Cane tetras and Diamond tetras. Very pleased with both and the Diamonds spawned for me. I'm managing to raise some fry in the community tank. *(Mark then sent us the article on Spawning Diamond Tetras for this issue.)*

I've bought a little from Aquatic Critters, the Candy Canes and a few plants. They are clearly the best shop in town, but that's not saying much. I've tried mail order plants and fish with success.

I'm glad you're keeping the Darter going. I check up on the club every once in a while. Wow! 240 members is a tremendous accomplishment. How many do you get for a meeting? *(Currently about 1/4 of our members attend F2F meetings. More are expected as the pandemic wanes.)*

We sort of have a club in Nashville. A young man and a high school student were organizing it, but got blocked by the Covid 19. When I feel like the pandemic is finally really over, I'll help them if I can.

Mark England



MASI General Meeting: Thurs, Sept. 16th, 2021 at 7:30 PM!!



Patrick Tosie:

Winterizing Water Features!

Patrick, owner of Wild Wind Landscaping, will discuss closing water features and ponds for St Louis winters. Key will be a discussion of fish overwintering and the care they might need. He will also discuss handling water plants, which plants are considered hardy in the STL area and preparing them for the winter vs those commonly used in features but needing additional protection. He will discuss allowing water features to run and materials, benefits and drawbacks of covering ponds over the winter.



Bio:
Patrick
Tosie owns



Wild Wind Landscaping, specializing in Water Ponds and outdoor water features. He is an expert at troubleshooting pond issues including fish and plants, water quality and leaks - a general go-to guy. Patrick creates beautiful outdoor spaces even in small yards with the water features he designs including dry creek beds, pond features and hardscapes.

Patrick was introduced to the aquatic world by his father at an early age. He has worked with water features since turning 16 and has assisted several MASI members with prize winning outdoor aquascapes. In 2020 he helped complete a 16,000 gallon koi and goldfish, waterscaped pond and is currently working to split a large koi pond to also allow human swimming. Patrick keeps koi himself but is currently using his indoor aquariums to house plants to be used when waterscaping.

**At MASI's NEW
meeting location:**

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

**Follow the signs - see the
map on MASI's Website**





Come Help Fill Our New Space!



Missouri Aquarium Society general meetings move to a new location!

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

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

About ½ mile from the light, turn sharp left between the small lake and the interstate to reach the parking lot.



**MASI General Meeting: 7:30
PM CT, Thurs, Oct. 21st, 2021!!**



**Melanie Holmes:
Aquascaping, Wabi-Kusa style!**



Wabi-Kusa, a modern Aquascaping form, emphasizes the terrestrial life of many common aquatic plants. The aquascaper's version of a nano tank akin to Bonsai. Wabi-Kusa was early recognized by Takashi Amano as its own art form attempting to illustrate



nature. It often begins with just a ball of "dirt".

Melanie will demonstrate, with club hands on, the principles and methods of this new aquatic art.

Bio: Melanie aquascapes her own aquaria in modern style. She has been a member of the Missouri Aquarium Society since 2018 and is a member of the Aquatic Gardeners Association (AGA) and the Chicago Aquatic Plant Society (CAPS) both providing inspiration for her. She has traveled to recent AGA International meetings and now enters their International Aquascaping Contests. Most recently she helped fellow aquascapers at the 2021 Chicago Aquashella. Melanie is particularly proud of the Biotopes she creates for her fish, including native American species.

Melanie is a very active MASI member, has been on the Council and often creates murals for MASI meetings depicting various aspects of our club, including bowl shows and library. Her family, all artistically inclined, are each musicians or artists in their own right.



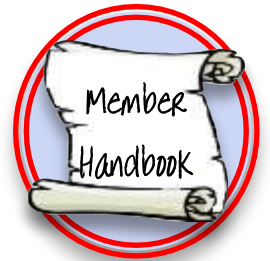
At MASI's NEW meeting location!





MEMBERSHIP CHAIRMAN

OPEN



MASI is still growing!

New since last Darter!

Kennon Cox	O'Fallon, MO
Tyler Dotson	Union, MO
Marty Faulstich	Arnold, MO
Brandon Grieve	Foristell, MO
Andrew Kilpatrick	Troy, MO
Charles Kues	Florissant, MO
Andy Mason	Troy, IL
Robert Rafferty	St Louis, MO
Matt Sanders	Glasgow, MO
Judy McCall	Fenton, MO
Teresa Johnson	Ballwin, MO

Welcome our new 2021 Members!





This August Auction's Raffle was won by Sherri Davies of St Louis



The Summer Auction Raffle Tank was donated by Sailfin Pet Shop and Marineland:

29 Gallon Exhibit Series WiFi LED Kit

Control your tank from your Phone!



Missouri Aquarium Society's Fall Fish Auction Sunday, November 7, 2021

Viewing 10:00 AM, Auction Begins at 11:00 AM
Verbal & silent auctions running until about 4:00PM

500+ Lots of Aquarium FISH, Plants, Equipment, TANKS, Fish Food, Décor and all things Aquarium!!
Free Buyer Number at the Door!



Both Tank & Gift Certificate Raffles!

Sellers must Pre-Register with auction@missouriaquariumsociety.com after October 17th. Seller rules on MASI's Webpage.



Holiday Inn- Airport West, Earth City 3400 Rider Trail S, St. Louis, MO 63045





Doors open to Buyers at 12:00 Noon. \$5 entrance for adults, Children Free! (Becomes \$3 at 1:00 PM) Find what you want and make your best Deals!

50 Table SWAP Meet on Sunday, Sept 19, 2021 Noon to 3 PM!

Event @



Holiday Inn®
AIRPORT WEST, EARTH CITY
3400 RIDER TRAIL SOUTH
ST. LOUIS, MO 63045

- 🐟 Mike Hellweg - Exotic Aquatics. Wide range of dry foods, plants, coconut huts, nano , schooling and rare species.**
- 🐟 Steve Coxon - Apistos, plants and much more**
- 🐟 Caleb Pitman - Rainbowfish, plants, and much more.**
- 🐟 David Short - TBD**
- 🐟 Abigail Svoboda - TBD**
- 🐟 Warren Crabtree - Midwest Tropical Fish, to much to list.**
- 🐟 Derek Walker - TBD**
- 🐟 Russell Crandon, Third Eye Aquatics- wide variety TBA**

- 🐟 Gary Lange- Plants & much more**
- 🐟 Jake Harris - TBD**
- 🐟 Lora & Bob Watson- livebearers and more**
- 🐟 Clint @ Prestige Aquatics- wide variety TBA**
- 🐟 Andy Heck - Angelfish, guppies, shrimp, other livebearers.**
- 🐟 Mike Misuraco - African cichlids**
- 🐟 Derek Zollinger - TBD**
- 🐟 Chad Brockmeyer - TBD**
- 🐟 Justin Warnock - fertilizers, aquarium and plant-related 3D**

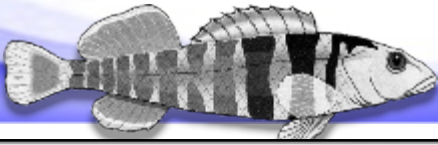
prints, a variety of plants, many uncommon/rare, and possibly some yellow shrimp and fish.

- 🐟 Mark Simmons Breeder - Discus, Angel's, African cichlids**
- 🐟 Jason Mize- Fresh & Salt water. Filters, bettas, loaches, crabs, nails, jellyfish, eels, seaweed & more**
- 🐟 Ed Millinger - lots of New " old " stock equipment. Never used, still in the box, unopened.**
- 🐟 Charles Harrison - TBD**

SWAP Vendor list as of September 1, 2021



The DARTER



Friday, July 23, 2021

- 8:00 AM Vendor Room Set up, Tank Rental Room Set up
- 3:00 PM **BABES** silent auction open
- 3:00 PM **Steve Edie - On Keeping Tanganyika Cichlids**
- 4:30 PM **Pam Chin - Tropheus**
- 6:00 PM **Dave Schumacher - Lake Malawi Mbuna**
- 8:30 PM **Don Danko - History of Central American Cichlids**
- 10:00 PM **BABES Auction**
- 8:00 PM Hospitality Room Open

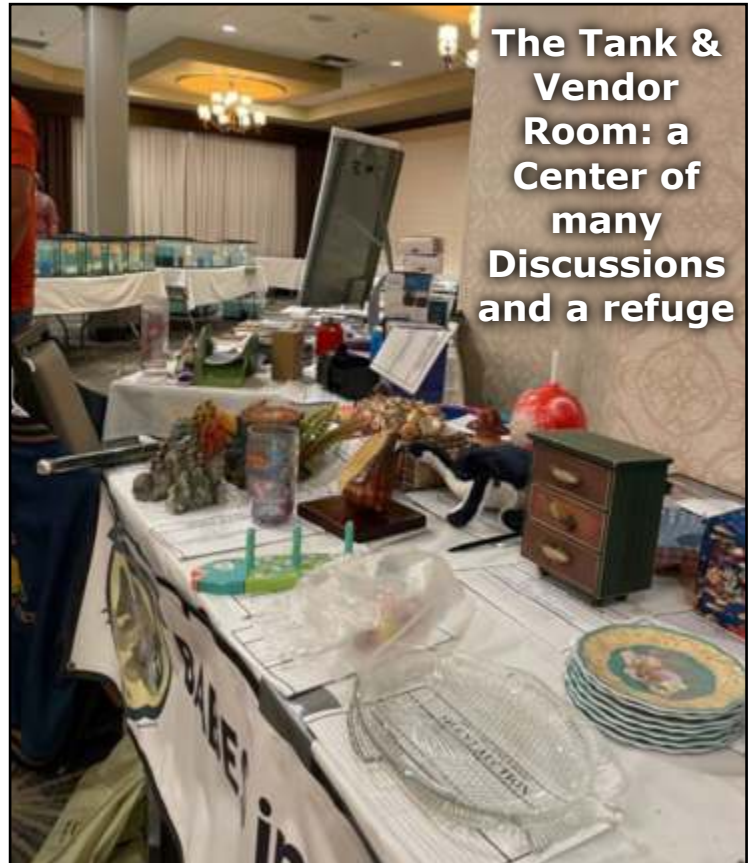
Saturday, July 24, 2021

- 9:00 AM Vendor, Tank Rental and BABES Auction tables open
- 9:30 AM **Dave Schumacher - Victoria Basin Cichlids**
- 11:00 AM **Don Danko - Mouthbrooding Cichlids of Lake Tanganyika**
- 1:30 PM **Pam Chin - Swimming with Cichlids - Lake Tanganyika**
- 3:00 PM **Rusty Wessel - Cichlids with Livebearers**
- 3:00 PM Sunday Auction Pre-registration Opens
- 7:00 PM **Banquet**
- 8:00 PM **Keynote Speaker - Steve Edie - "The Talk"**
- 9:30 PM Hospitality Room Open

Sunday, July 25, 2021

- 11:00 AM **Cichlid & Catfish Auction**

PHOTO WRAP UP



The Main Convention Room was the source of 10 Educational Programs and an Awards Banquet



Long Term ACA & MASI members ended up on the front row



Lawrence Kent was a Surprise speaker at noon on Saturday



The Hospitality Room fueled many late night discussions



Pam Chin, always a major input discussed Swimming with Cichlids in Lake Tanganyika



Rusty Wessell made sure to Advertise the 2022 Aquatic Triple Crown



The **B**abes **I**n **T**he **C**ichlid **H**obby ensured that every one had a good time at their Friday evening Auction and other fund raisers





COUNCIL MINUTES

Executive Council

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

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

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

Give the Council your Feedback or Support!

Next Executive Council Meetings, on ZOOM except as noted:

Thurs, September 23, 7:30 PM

Thurs, October 28, 7:30 PM

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

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

Thurs, January 27, 2022, 7:30 PM



COUNCIL MEETING 6/24/21

Pat Tosie called the Zoom meeting to order at 7:30. Present were Gary Lange, Jack Heller, Angela Hellweg, Ian Eggert, Charles Harrison, Mike Huber, Caleb Pitman, Mike Hellweg,

Chuck Bremer and Chris Mohrle. Guests included Kathy Deutsch, Steve Coxon and Scot Roach.

ANNOUNCEMENTS:

- Then next Council meeting is July 29.

- The ACA Convention hosted by MASI is July 23-25.

REPORTS:

- **SECRETARY:** Angela read the Minutes from the May 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 was made by Mike Huber and was seconded by Ian Eggert. The motion passed.
- **EDITOR:** The deadline for MASI submissions for the July/Aug Darter is July 6.
- **AUCTION:** The next auction is Aug 8. Auction items will be in the hall to allow for more space in the auction room.
- **BOWL SHOW:** Bowl show will be online until the end of the year,

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



and open class will be at the in person meetings.

BANQUET: Sign up for the Aug 21 banquet needs to be set up.

SOCIAL EVENTS: The possibility of a fall MASI picnic and bowling was discussed.

WEB MASTER: Future events and dates need to be updated on the website.

OLD BUSINESS: None

NEW BUSINESS:

- Mike Hellweg has agreed to continue as Auction Chair, Chuck

Bremer will continue as Darter Editor, and Chris Mohrle as Convention/Show chair. Holly Paoni and Eric Bazzell will be Swap co-chairs.

- Kurt Zahringer wants to organize a collecting trip after the ACA Convention on Monday July 26.
- 2022 Auction and Swap dates need to be set up soon.
- Reinstating MASI Corresponding memberships was discussed. This will need to be taken up by the FORC committee.

A motion to adjourn at 8:40 was made by Charles Harrison and was seconded by Ian Eggert. The motion passed.



MASI ZOOM Council Attendees - 7/29/2021



COUNCIL MEETING 7/29/21

Angela Hellweg called the Zoom meeting to order at 7:34. Present were Jake Harris, Kathy Deutsch, Charles Harrison, Steve Coxon, Mike Huber, Gary Lange, Caleb Pitman, Mike Hellweg and Chuck Bremer. Guests were Eric Bazzell and Jack Heller.

ANNOUNCEMENTS:

- The next Council meeting is Aug 26.
- The next auction is Aug 8.
- The MASI Awards Banquet and Fishy Bucks auction is Aug 21.

REPORTS:

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

Charles Harrison and was seconded by Mike Hellweg. The motion passed.

- **TREASURER:** Jack Heller read the Treasurer's report. A motion to approve was made by Mike Hellweg and was seconded by Caleb Pitman. The motion passed.
- **EDITOR:** Darter submissions for the Sep-Oct issue are due by Sep 7.
- **ACA CONVENTION:** The convention went well. There were over 200 attendees. No final numbers are available yet.
- **BOWL SHOW:** Bowl show entries will be in person only.
- **SWAP:** There are still table available.
- **SPEAKERS:** Jake is looking for a speaker for the Aug General meeting.

- **YOUTUBE:** Jake is looking for someone to take over the Youtube duties.

OLD BUSINESS:

- Kathy provided some information on a possible MASI picnic in the fall.

NEW BUSINESS:

- Mike Hellweg has the Show supplies and needs someone to store them.
- Mike Hellweg will purchase signs to put up at the new meeting site at Jost Chemical.

A motion to adjourn at 8:26 was made by Charles Harrison and was seconded by Mike Huber. The motion passed.





The DARTER

MASI's Fish Bucks Auction was Fun for all!

Unfortunately the Awards didn't arrive so will be distributed at one of the upcoming Missouri Aquarium Society monthly meetings.



Chris Mohrle, Show Chairman, provided the banking for the Event!



Steve Coxon was the proud winner of the costliest lot of the night.

A bag of *Corydoras narcissus* - Long Nosed Skunk Corys for only \$4750 Fish Bucks!

And, if you're keeping score, frugal Robbie Simmons bought a bag of *Skiffia* for \$25 Fish Bucks!



Charles Harrison, runner up for the Corys, was left counting his remaining funds



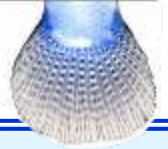


JR Shute, founder and co-director of CFI, checking for eggs on a spawning mop in a tank of *Fundulus julisia*, the Barrens topminnow as Steve Coxon's kids watch.

MASI's 2020 Challenge Extended through 2021!!



CONSERVATION FISHERIES
PRESERVING THE SOUTHEAST'S AQUATIC BIODIVERSITY



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

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

History of the MASI Challenge

By Mike Hellweg

EVERY YEAR, THE Missouri Aquarium Society (MASI), makes donations of time, talent, and treasure to various aquarium, fish or hobby-related charities, schools, and research or conservation funds. This is so important to us that it is included in Article 2 of our bylaws as part of our organizational charter.

It's our way of giving back to the hobby and the community. We've been doing this nearly every year, no matter the size of our treasury, since we were first incorporated in 1959, whether it was something small like replacing a pump for an aquatic exhibit at the zoo, or supplying an inner city classroom with a fish tank and then having members visit the classroom and talk to the kids about fish, or something as hopefully long-lasting as helping fund the re-introduction of the once extinct in the wild Goodeid, *Zoogoneticus tequila*, which is now on its way to recovery.

For decades we did this quietly and didn't make a big deal about it. Almost 20 years ago we realized that most aquarium hobby clubs, and many

hobbyists, would talk a good game about support for the many aquarium or conservation related organizations, but actually provide little or nothing in the way of support to these same entities. We decided to make our donations public at a large aquarium hobby event and challenge other clubs and individuals to step up, put their money where their collective mouth is to do the same.

Since then we began to call it the MASI Challenge and over the years we have raised tens of thousands of dollars for various charities and organizations.

The club provides \$300 in seed money to start the Challenge each year, and we promote the Challenge at every club meeting and event throughout the year. We ask folks to donate fish, plants and other aquarium hobby-related items to our monthly meeting auctions for the Challenge, and also allow them to donate items at our semi-annual swaps and quarterly auctions. For our last Challenge, the AKA's George Maier Fund, we raised over \$2500! For this year's Challenge, we're well on our way to topping \$2000 again.

The first year that we made the Challenge, the American Livebearer Association (ALA) was having trouble raising funds to make two small research grants to grad students from their Vern Parish Fund. I stood up, presented our check and made the first MASI Challenge at the ALA annual banquet that year. It quickly spurred on donations from other clubs and individuals such that not only was the ALA able to make both grants, but they were also able to add nearly 50% to the principal of their Vern Parish Fund!

We hope that by making this Challenge public, we can spur you on to making even a small donation to your favorite aquarium-related charity. This year we've chosen Conservation Fisheries right here in the USA. While you're reading this and thinking about it, why not make a donation yourself? Even a small donation such as \$5 or \$10 will make a huge difference in the work they are trying to do to with US native fish.

The Missouri Aquarium Society asks members of other aquatic clubs to talk to their leaders and challenge those clubs to step up and join us. If not with money, volunteer to help out with something local, even something as simple as talking to school children about fish.

With all of us working together, there is no limit to the good we can do for our beloved aquatic world!



Appreciation to Phil Nixon, MASI Member and August Program for donating his Speaker's check to MASI's current CFI Challenge.





MASI AUCTION MESSAGE

Mike Hellweg

The auction ran until about 4 pm, so it ended just about on time and no one had to work extra. There was a great assortment of items.

There were just under 500 items total, and prices held up all the way to the end, so there were bidders sparring on just about everything. The average seller check was about 10 percent higher than average, too.

Thanks to Marineland and Sailfin Petshop for the donation of the 29 gallon complete setup. If you missed the auction, you missed a once in a lifetime opportunity to win a tank, top, LED WiFi light, and stand with a built in filter and heater.

If you missed the August auction, I hope we see you at the Annual Fall Auction on November 7, 2021.

Auction Report #54!

The 2021 Summer Auction is in the books!

It went very well from almost any way you look at it. First and foremost, everyone had a good time.

*And for now, 'nuff said,
Mike :*

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CHRIS

Bowl Show

Bowl Show Contests



Don't forget:
Bowl Show Entrants get Fish Buck Rewards!!

propagationaquatics@gmail.com

Updating the Bowl Show 2021

In light of the pandemic we've shuffled the bowl show around.

The online FBT schedule has run its course and we are now resuming in person meetings so the Bowl Show is coming back to the meetings as well!!

We will be featuring 2 classes per month until November. There will not be an open class until November. This will allow us to feature all of our favorite classes within the limited time.

Here are the classes for the rest of the year. Don't forget each entry earns you fish bucks throughout the year!

Chris

September

- Cichlids
- Catfish

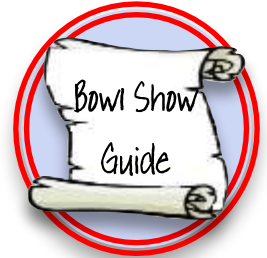
October

- Rainbows
- Characins - Tetras, Pencilfish, Piranhas, etc.

November

- Livebearers
- Open Class

We will go back to a normal schedule in 2022.



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.

Bring your entries to the meetings!!



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HOLLY

Social Media

MASI SOCIAL MEDIA

Holly Paoni

Common Social media Questions

There are several common questions, comments and issues commonly discussed in social media groups in the region. Most arise from lack of information about a species acquired for the first time.

Before purchase, please research the fish catching your interest. Some fish are nocturnal. Others are reclusive or naturally shy. Some prefer different cover types to feel secure. Some may come from areas where the trees shade their natural habitat all day and don't like very bright conditions.

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

Check your local club info online or the libraries of printed books most have. If the club doesn't have a book with the info you want, chances are a member has it or knows of a magazine article about it.

The National Associations also have great information, such as American Killifish Association, American Cichlid Association, or the American Livebearer Association, etc. They each have their own website.

There are also privately supported web sites with loads of information on specific groups:

Catfish: planetcatfish.com, and loaches.com, provide a wealth of info.

Goodeids: <http://www.goodeidworkinggroup.com/>

Almost anything in the hobby: Seriouslyfish.com

Cichlids: <http://www.borstein.info/profiles/>

I find that while not all YouTube channels or websites are giving bad info, many just don't give enough. A quick search on any fish brings up Wikis, Animal World, large retailers, and the most popular YouTube videos, or ads at the top. Dig past these, to get to the GOOD stuff. Many old archived forums are also great ways to see how others have had success in the past.

After understanding a species' needs you can better know why they act as they do.

Here's an example:

Q: I bought 1-2 schooling or shoaling fish, and they are always hiding or hovering or fighting. Why?

Schooling and shoaling fish only show their natural behavior in groups. In nature the fish have groups of 200-1000 individuals. Only 1 or 2 are stressed and will act out or hide. There just aren't enough in the school.

Some fish have hierarchical social structures. Those are the ones nipping each other. One is trying to be the Alpha and in a normally large group this is so spread out it is not an issue. In very small groups where the aggression can't spread, you'll end up with 1 that isn't happy.

Those fish that are hovering or hiding need larger groups of their own kind to feel safe. In smaller numbers, they will rarely come out.

With either a group of 5-7 is the minimum recommended. Personally, to see natural behaviors I prefer 11+, unless I'm getting a group for a breeding project. If it's a fish I enjoy keeping around, my schools / shoals will be around 24- 36 and I'll pull future breeders from that larger group.

I've always got more questions, but I'll wait on those till next time. Till then, research your species!

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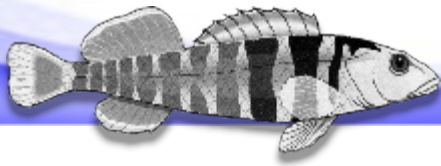
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Tub Breeding Of Paradise Fish

*With some out in the
box thinking!*

By Holly Paoni

LIKE TO EXPERIMENT with DIY and try to keep things as simple and natural as possible. I wanted to tub my young pair of paradise fish this year... in a 29 gal tote, and get a couple fry. I did not want my female getting beat up in the smaller area, especially when you can't see exactly what is going on inside tubs and totes. So I just started thinking out of the box and finally decided on this set up:

A milk crate upside down in the center of the tub added to this crazy idea. I had a planter that hangs over each side of a deck railing. It fit over the side of my tuff tote perfectly and the height of the milk crate was also perfect for support of the planter.

I did get some funny looks from the family... but there is a method to my madness folks! I promise!

I filled the planter with lizards tail. The soil mix would always stay boggy as the planter bottom is about 1/2 inch below waters surface. Lizards tail quickly grows a network of fine long branched roots. These would provide a great place for the male to build a bubble nest, under the shelter of the planter and storms wouldn't destroy a nest hidden back there. The root system would also provide a home for a long list of potential microscopic foods for the newborn fry also.

A bunch of *Riccia fluitans* was also stuffed into the recess. *Riccia* is another



great plant for tiny fry and for sheltering a bubble nest.

With the milk crate in the center, there's about a 1.5 inch clearance on the front and back sides of the tub. Plenty of room for paradise fish to swim around the long way to the other side but the key to the inverted milk crate idea was its honeycomb structure of holes on the sides and bottom.

More lizards tail cuttings, anacharis cuttings, pennywort starts, and Stargrass stems created a maze through the milk crate for the fish. The adults can easily pass through the open holes, but the maze of stems, plants and roots slows them down.

Until the rest of the plants really took off a floating basket with more *Riccia* was added. This basket allowed fry a place of escape where the adults couldn't go. It was removed to make more room for the other plants, half way through the season.

Paradise fish males are very protective of the spawn in a bubble nest. Usually it is best to remove the female as soon as possible after spawning. Males will kill them if they don't leave the area, and both adults will eat the fry shortly after they become free swimming. So for my female to live through the season, and any fry to survive, in a 29 gal tote, planning was crucial.

In nature, there are lots of obstacles and shelter, lots of space, or both. I went for lots and lots of obstacles and shelter, without taking up any real room in the tote.

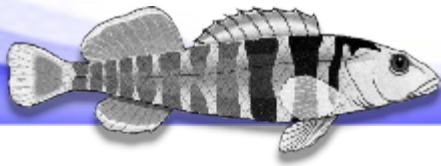
I was not expecting it to be a huge success and would have been happy with 6 surviving juvies, and my original pair. This was for fun, not to breed gobs of fish. I will not know the total number of juvies till I carefully tear down this tub this fall.

Currently, both adults are routinely seen, we've witnessed 4 bubble nests, have spotted 5 different swarms of new fry by peeking into a 6x6 area, and at any time, can count over a dozen juvies of various sizes. This tote size is close to a 29gal tank, with a wider footprint and not as deep. That's a small sample size and the way it's looking, I'll have plenty to share!

Don't be afraid to try new things or use out of the ordinary items. Just make sure they are clean and, for tubbing, at least water safe for a short time.

This has been one of my favorite tubs to watch this year... partly because of the mystery till tear down. At that time the original pair plus 34 fry and juveniles of 4 distinct sizes were pulled from the 29 gal tote!





Miniature Ponds

Can be put nearly anywhere!

By Chuck Bell

BIGGER ISN'T ALWAYS better. Sometimes good things come in smaller packages. My new additions to the outside garden are my small accent ponds.

For those with limited space, or just wanting to add something small to an existing garden, these can be quite attractive- as well as different. I like to highlight my aquatic plants by surrounding them with summer flowering plants and container gardening.

As shown here, almost any container that holds water can be used. The first miniature water garden utilizes a small 8" deep pond liner that can be purchased at most garden centers. The second is a plastic 55 gallon drum. These containers may



Surrounded by terrestrials in bloom



Deeper half barrel in the sun

need to be sunk into the ground, so they don't overheat in the summer. They also need to be heavily planted, to provide plenty of shade for the water so that it can maintain a cooler temperature.

While they are great for showing off your plants, they are not capable of supporting many fish. I would place 2-4 small male fish in each. The fish are necessary to keep mosquito larvae at bay, and also adds some small movement in the ponds. I like to use swordtails, mollies, guppies and even small goldfish in this type of pond. I also add driftwood and rocks, but feel free to use your imagination and add any other ornamental pieces that you like.

The types of plants used vary with the size of the container. In the smaller pond, I have water hyacinth, a small black elephant ear, lizard tail and flag. The larger pond (barrel) has a water lily, that needs added depth, as well as the same plants that are in the smaller pond.

At times I also incorporate peace lilies. Most aquatic plants will work, and those that need added depth are good in the barrel. These small ponds also work well for starting cuttings from your garden, as I have started coleus, lizard tail, arrowhead, and bamboo with good success.

These small ponds can be fun, and be easily added to your garden, or

even a small deck, as long as there is shade. They are easily placed anywhere in your yard, near the mailbox by the street, or in shady spots by a tree that are often bare.

I hope you try a small aquatic pond next summer.

Talk to Caleb Pitman to order one of the new MASI Polo-Shirts

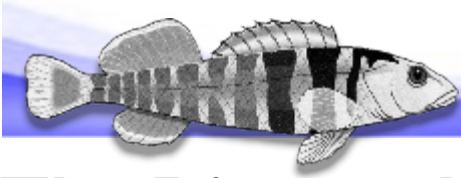


\$15 Ea



Shallow tub in the shade





The Diamond Tetra

A Subtle Beauty

By Mark England

THE DIAMOND TETRA, *Moenkhausia pittieri*, is not for everyone. It is rather drab as a juvenile with an olive grey base color. However, if you see a school of mature diamonds in a well planted, properly lit tank, you will find them stunning.

With long, flowing fins and glittery scales that reflect the light in tones of pink, silver, and gold, these magnificent fish have a subtle beauty that more experienced hobbyists will appreciate.

The Diamond Tetra is not rare, but retailers do not often stock them because they look so plain when young. You can regularly find them from online sellers. According to SeriouslyFish.com wild fish can be found in Lake Valencia, Venezuela and nearby streams, but almost all fish in the trade are now commercially bred. Diamonds are undemanding in their care and will adapt well to most community tanks. Seriously Fish recommends 75-82° F, 5.5-7.0 pH and 5-12° hardness. They suggest a variety of prepared and frozen foods.

I obtained my diamonds from an online seller. Once out of quarantine, they quickly adapted to life in a 75 gal., densely planted tank. I keep 14 diamonds along with an equal number of Candy Cane Tetras (aka Ornate



Tetras or *Hyphessobrycon bentosi*), and an unknown number of *Otocinclus* and Amanos.

My water is 75° F, 6-7 pH through the day with CO2 added, and the Fluval Stratum substrate softens the water to 3-5° KH. I change 50% of the water twice a week and feed flake, bloodworms, and frozen brine shrimp. Before long several fish were showing interest in each other and spending most of the day burrowed into a thick stand of Octopus weed (*Pogostemon stellatus*).

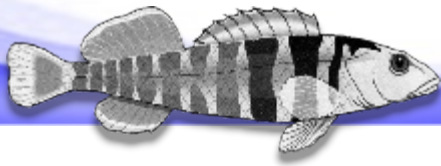
I didn't think much about it since I couldn't really see their activity well. So I was surprised a month later to see fry swimming free. They had survived on the natural fauna of my planted tank. I moved them to a tank of their own and fed them decapsulated brine shrimp eggs and ground flake food. Within another month, I felt confident in their return to the community tank, and they have been thriving ever since.

Diamond Tetra behavior is typical of tetras, although at 2.5" standard length, they are a bit larger than most. They match well with my Candy Cane Tetras. The diamonds don't bother other fish, but will chase away trespassers when they have chosen an area for spawning.

Courting males will display with their flowing fins erect and bodies tilted towards each other to prove they are worthy of female attention. These are schooling fish and will do best in groups of six or more. Diamonds will school tightly when nervous, but in a densely planted tank the schooling behavior is looser and sporadic.

If you've never had Diamond Tetras and are looking for something a little unusual for your planted tank, try them out. A school of mature diamonds is a treat for the eyes.





1916 U-Boat Delivered Tropical Fish for St. Louis

By Thomas M. Keevin & Chuck Bremer



Postcard of the German U-Boat Deutschland on its Maiden Voyage arriving in Baltimore Harbor on 10 July 1916.

THE GERMAN U-BOAT Deutschland Arrived in Baltimore Harbor in 1916 with a Shipment of Tropical Fish Bound for St. Louis, Missouri.

S. Chichester Lloyd became a short side-note in the history of World War I when he sponsored a shipment of tropical fish from Germany during the early part of the war, while the United States was still officially neutral.

Lloyd was a prominent figure in the early history of the aquarium hobby in the United States and St. Louis. Originating in Newark, NJ, Lloyd ultimately moved to St Louis



Trinidadian Guppy pair likely to be similar to those delivered by the Deutschland. (Source Wikipedia)

where he was elected president of the National Aquarium Society of America and likely founded the St. Louis Aquarium Society. In later years Lloyd moved on to California but while in St Louis he was instrumental in early promotion of Goldfish here¹ and, as President of the St. Louis Aquarium Society, was one of the earliest proponents of a public St. Louis City supported aquaria, not to be fulfilled until over a century later.

The fish shipment was transported by a German U-Boat that arrived in Baltimore, Maryland, on 10 July 1916 and then transported to St. Louis by express, the fish being carried by an officer aboard the Deutschland, a friend of Lloyd's.

According to two St. Louis newspapers²⁻³ (15 & 16 July 1916), the shipment included twenty-two fish which had been brought over from Hamburg and Lloyd said were forwarded to him by an officer of the undersea boat Deutschland. Twenty of the fish were "peacock fish (plopy Poecilia guppy)". Lloyd indicated that the fish were half an inch long and natives of the northern part of South America. He described the peacock fish "as pink in color with large "eyes" of a metallic blue color over its body."

Lloyd noted that the peacock fish population had tripled overnight. These were undoubtedly guppies (*Poecilia reticulata*). The shipment also included two zebra fish (*Danio rerio*). The fish were to be displayed on Monday night (17 July 1916) at the American Hotel, following a banquet of the St. Louis Aquarium Society. Apparently, it didn't take much to get the aquarium hobbyist crowd excited in 1916!

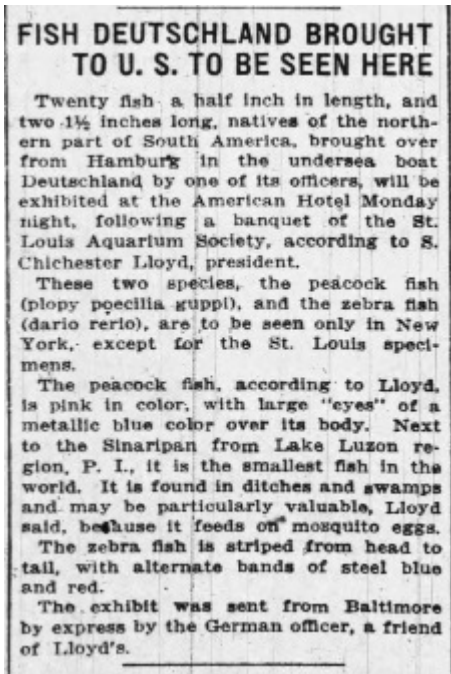
The Deutschland⁴ was built as an unarmed blockade-breaking submarine intended to transport commercial products to the United



S. Chichester Lloyd at his desk as manager of Elliott Addressing Machine Company in 1927. Aquarium to his left. ⁵



States and return to Germany with raw materials for the war effort. The United States had not entered World War I and was officially neutral at this time. The submarine was the first of seven U-151 class U-boats built and one of only two used as unarmed cargo submarines. Her sister ship, the Bremen, was lost on its maiden voyage to the United States. Due to the United States entry into WW I, the other five submarine freighters were converted into long-range cruiser submarine (U-Kreuzers), equipped with two 150 mm deck guns.



The 22 tropical fish were transported on the Deutschland's maiden voyage. She carried 750 tons of cargo, including 125 tons of highly sought-after chemical dyes, medical drugs, gemstones, and diplomatic mail, with her cargo being worth \$1.5 million (approximately \$36 million today).

There is no official mention of the tropical fish being transported on that voyage. On her return trip to Germany the cargo included 341 tons of nickel, 93 tons of tin, and 348 tons of crude rubber (257 tons of which were carried outside the pressure hull) for the German war effort. Her cargo was valued at \$17.5 million, several times the submarine's construction costs. Possibly fish were sent back to Germany in exchange for the fish sent to the U.S., all on the sly.

The Deutschland made only two voyages to the United States. A third voyage, planned for January 1917, was aborted as German-US relations had worsened following the sinking of shipping bound for the United Kingdom, often just outside US territorial waters. The U.S. declared war on Germany on 6 April 1917.

The Deutschland was taken over by the German Imperial Navy on 19 February 1917 and converted into the U-155, part of the U-Kreuzer Flotilla, being fitted with 6 bow torpedo tubes with 18 torpedoes, and two 15 cm SK L/40 naval guns. Her service to Germany included sinking 42 cargo ships, four from the United States, and damaging one, also from the United States.

So, when you are laying awake at night wondering how tropical fish were transported across the globe in the early days of the aquarium hobby, the answer is by cargo ship ... and occasionally by submarine!

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3/ Anonymous. 1916b. Fish Deutschland Brought to U.S. to be Seen Here. St. Louis Globe Democrat 16 July 1916.

4/ German submarine Deutschland. (Article Accessed on 9 August 2021). https://en.wikipedia.org/wiki/German_submarine_Deutschland

5/ Harry R. Burke, Odyssey of an Cowboy from New York whose hobby is aquarium keeping. St. Louis Globe-Democrat · 5 Jun 1927, Sun · Page 97

Editor's Note: Although S. Chichester Lloyd is mentioned in these newspaper articles as their source, for many St. Louis aquarists he may not have been the most recognizable name involved in this early shipment of tropical fish.

At about the same time Otto Beldt, who had already emigrated to St. Louis, was about to become active as a fish and lily breeder. The fish in this article were apparently sourced from Hamburg where Otto's father already owned his own import/export tropical fish business. Substantiation has not been found but Otto may have helped import of these fish and they may also have entered his own and eventually widely known fish breeding and tropical fish wholesale venture that lasted late into the 19th century.

Otto Beldt is still recognized as having a significant impact on the hobby in the region.

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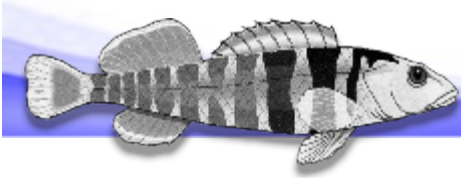
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The DARTER

Cnesterodon decemmaculatus

-

The 10 spot livebearer

-

By Holly Paoni



© Roman Slaboch

CNESTERODON DECEMMACULATUS IS a sweet little nano livebearer with a name longer than the fish!

Seriously the majority average a tad over an inch. Mature females are between 1.25- 1.5 inches on average. The fry are tiny- just a smidge bigger than *Heterandria formosa*, aka: the least killiefish, another nano sized livebearer. They get this long name from the 10 black spots that lie horizontally down the lateral line. These spots come and go according to mood: Spook them and the spots disappear completely and if several fish are in a breeding frame of mind, those spots on the males get bolder.

The 10 Spots come from southern South America, which has a subtropical climate. They can be found in coastal ditches and drainage systems of major rivers in Southern Uruguay and Western Argentina. There the summer high temps reach the mid 70s, the winter lows drop to the mid 40s and the yearly average temp is mid 60s. They have been seen under a thin sheet of ice during rare freezes. I keep mine between low to mid 60s in winter

and low 70s in summer so average household temps, work perfectly .

Like the *Heterandria formosa*, and a couple other tiny livebearers, this species practices superfoetation. Instead of having all their fry at once, fry develop in intervals to be birthed a couple at a time, every few days through the month. There's a constant supply of new truly little fry to keep an eye out for. Looking for and finding newborn fry of these is always a joy.

4 Spots can be found in coastal ditches in brackish water and can slowly be converted over to a brackish environment. In fresh water they

prefer neutral to hard water, similar to the much more common guppy.

I keep returning to this fish species. I kept them quite awhile, then cleared tank space for something else- missed them, so got them back. ...did it yet again, Because I didn't learn. ...then even yet again.

I think I'm on my 4th time keeping these in over 20 yrs. Only twice while I've been involved with MASI and fish clubs in general- the other times they came from a small hole in the wall, old style independent fish store.

The owner had gotten them, loved them, and kept a 55 gal with hundreds of them, under the sales counter. I instantly had to have some but were told they were not for sale! Back then, the Internet was in its early infancy and I didn't even own a computer yet. Uncommon fish came from ads in the back of fish magazines. No photos, just a sales ad, unless you were in a club, but I knew nothing of clubs then either!

Eventually, the store owner gave in and sold me I scoop. When I moved, I took my new colony back to him. When I went back through the area later I had to stop in, so I got some more. At the time I only knew



them as a spotted dwarf livebearer that needed cooler temps.

My current colony is staying put! Their tanks are my li'l piece of zen, always has been. I love watching them!

They are very peaceful. They aren't chasing, nipping or even zipping around. They don't come up to the front glass expecting to be fed every time they see you, they just continue doing whatever they were doing. You can watch them without them reacting to you like a tiny slice of nature you are just observing. At times they play follow the leader. The biggest female starts going, then the rest follow her lead. They'll make a few laps around the tank and all will join no matter where they had been hiding. Then the laps stop and they scatter like it never happened. When this happens I can get a good head count.

They can be put with literally any species that won't eat them and is temperature compatible without issues. I've got neo shrimp bigger than adult 10 spots. My experience is they

don't bother each other at all. When they meet its more like "Oh, Hi, what are you... ok then, nice ta meet ya, see ya later" ... then everyone's back to slowly exploring the tank again.

10 spots also do not seem at all cannibalistic towards their fry but they will gobble up paramecium, small scuds, daphnia, the various microworms, as well as soft green algae, soft blanched veggies, and a wide variety of small dry foods.

I use a larger gravel or have lower level hiding spots in their tanks. The older juvies and adults go into the plant cover in the middle of the tank during routine maintance. The younger ones go down close to the substrate. I like to give species cover, where their instincts tell them to take shelter.

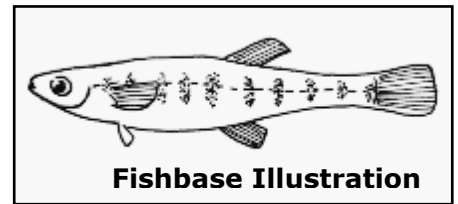
Currently I have 4 tanks of these going. Yes, 4! I told you I enjoy watching them!

I hve 2- 10 gallon tanks each with about 2 dozen fish, 1- 20 long that averages 3-4 dozen. And 1 tiny lil 1 gal next to the living room recliner with a

trio of 10 spots, and a few light green neo shrimp. This tank was a get well gift while I was recuperating from my burns.

It's hard for a fish geek to not be in their fishroom, but if they are, even harder when they can't get their hands wet! So a little piece of the fishroom came to me. Normally I do not like tanks this small, as they take a lot of maintance. This one is small enough I can just take a cup or so out to water a houseplant, then do a quick top off- its handy and not much time.

There are many species that I consider a long term favorite, each for its own reason. The 10 spot livebearer is just one of these.



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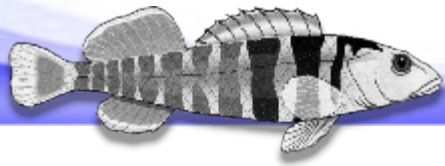
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The DARTER

Diverse Species From the Tanks of Steve Coxon



Pachypanchax sakaramyi male

© S Coxon



Gold laser cories

© S Coxon



Betta uberis male

© S Coxon



Apistogramma alacrina mother and juveniles

© S Coxon



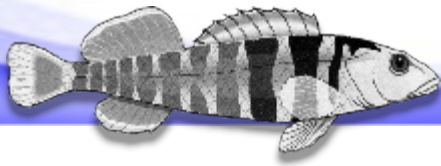
Scleromystax barbatus male

© S Coxon



**This is not
a photo
contest,
it's a FISH
show!**





The Outdoor Pond

By Kevin Wise



THERE COMES A time in one's life where you have to decide, do I just want to tub, do I just want to keep doing the same old thing year after year? For me and my wife, the answer was no, there had to be more.

We both love our plants, we both love our goldfish, we both love the outdoors, and my wife always wanted her own pond. So, I decided to build us a pond, something that would go with the layout and look of our backyard, something that would flow, with what was already laid out and in place.

One night, yes night, due to my work most of the build would be done at night- with a few hours here and there during the day over the next 4 weeks, I laid out a rough plan on where the pond would go and started to dig. When I was done with the outline of

the pond, then came the decisions where would the shallow end be, ...and the deep end.

Of course when you're doing this the best plans never go as envisioned. A HUGE oak tree not even 10 feet from the end of the pond provided some of the fun part. Roots, and just not any roots, we are talking about tree branch size, but after a few long hours, and four and half feet deep later, the deep end of the pond had been dug out. On the shallow end the shelves on the banks of the pond dug out, the shape had also been set.

A few tweaks to the slope, and new larger longer shelf here, and the shape of the pond was done, 2 weeks of digging, shaping and packing and the full shape and form the pond was to have, was complete.

The pond liner was ordered as I now had the size of the pond and knew what to get to make sure I had enough but not so much extra as a waste. Before I placed the liner, I laid some sand and cardboard down to help protect the liner from and sharp rocks roots or anything else that may have been missed.



Now came the fun part that I wasn't expecting, but should have- getting the liner to lay as best I could. I set the liner over the pond and starting in the deep end let the water slowly fill. I made sure to pull the slack of the liner, placing the liner into the corners, placing rocks on the edges and slopes to help keep its shape as the water filled and rose. During this I made sure there was slack and extra liner for the areas that needed room as to not have it too tight. As the water filled, the water pressure and the weight would push it down and fill the corners, edges, shelf and banks of the pond.

The outcome from a long night in the pond paid off as the pond was now full. The deep end was about 4 feet deep with a shallow end of 2 foot deep. The main body of the pond has shelves 12 to 20 inches deep. In the middle of the pond I built a raised underwater island that would be 12



inches below normal water level where a planter could sit. On either side of that was a 12 inch wide channel for water flow and allowing fish to move more freely.



After the pond was filled with water it was time to start placing the rocks that would give the pond a more natural look and feel. There were many many trips to the local landscaping store and after a surprise find of a local rock collector getting out of his hobby, I had my rocks to shape the future look of the new pond. After



a few tries I placed the rocks around the pond in a manner that helped keep the liner down and also gave it a more natural look. Placing the rock is like a puzzle - one wants to make sure all the pieces fit and also hold each other together.

The filtration for the pond is two pumps, one runs the waterfall, the other runs a side shoot of current, which looks like a creek channel dumping into the pond from under the walkway. The waterfall has pore matten foam like a huge hang-on-back filter, the other pump is enclosed with foam all around, and a larger filtration system is being built, but for now the bio load on the pond has not been affected as the pond is stabilized and in normal parameters



I build an overflow at one end so the water level wouldn't spill over where I didn't want water to go. Don't let water get under your liners as that can cause a ton of future issues. To keep the pond in place and not all over the area, an overflow was built like a spillway at a local lake. I built a channel for the excess water to flow down a sand bed with some rock to give it the look of a dried-up creek bed when running water. This runs to a deep area that filled with a mint plant that loves water- a win win.

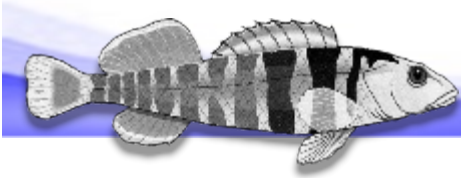
Now that the pond has been running for almost 3 months, there have been a few issues. Rocks fell in, the liner popped up at one end caused by water flowing over the edge causing me to build the spillway system the pond now has. The waterfall had a leak and it was moved so we could keep a

eye on it. A new waterfall will be build next season. This season is coming to a end shortly, so we decided to hold off and just let the pond be for the rest of this season without any major work done. We have let the plants and fish enjoy their first year in their new home.

This project was more of a challenge than I expected but the reward was well worth all the hard work that went into it. There are a few things I would have done differently, but with all that being said, walking out into our back yard, and seeing the pond I built, with my own hands, nothing makes me more happy than to see the smile on my wife's face as she gets to sit with her gold fish, play with her pond plants and enjoy her very own pond that she has wanted for a long time.

That feeling, makes all the work on the new pond, worth ever minute of it. Nothing compares to your very own back yard pond to add to the back yard beauty and expand your playground!





The DARTER

Minifins

The Sailfin Molly

Poecilia latipinna

By Mike Hellweg, CFN
(Certifiable Fish Nut)



YOU CAN WALK into almost any pet shop in the world and find at least one or two color or fin varieties of the sailfin molly, *Poecilia latipinna*. That’s amazing for a North American Native fish, most of which are relegated to specialists’ tanks.

In the wild, the sailfin molly is found from the Cape Fear River

system in North Carolina, all the way along the Atlantic and Gulf coast to the area around Veracruz in Mexico. They are found in pure freshwater, brackish water, and full strength sea water miles from shore. In most of their range, they are relegated to the role of “bait fish”, although a little over a century ago, early aquarists began to recognize their beauty and they quickly became a staple of the hobby, which they remain to this day.

Unfortunately, they are often sold as perfect fish for beginners,

which isn’t exactly true. What is true is that when given the right conditions they are hardy, easy to care for, and long lived, but they do need those “right conditions”. Without those they quickly become sickly and die. A fish that has clamped fins or that is shimmying in the corner rarely recovers and should be passed over.

A quick look at their varied habitat in the wild will shed some light on appropriate conditions, and also help to shatter a popular myth about them. I have personally collected beautiful wild fish from the Louisiana salt marshes, from the Florida Everglades, and from the Cape Fear River in North Carolina. This varied habitat shows how adaptable the species is, and I’ve only touched three of their thousands of miles of habitat!

The Cape Fear River, especially, is a varied habitat. Some of it is fairly hard and alkaline, but not salty at all, some is blackwater where the Black River joins it (which I’ve also collected in – while the water is contiguous with the Cape Fear River, no mollies there!), and some is estuarine. The mollies we collected were found primarily in the estuary. In and near the Everglades, we collected them in clear creeks and drainage ditches, all of which were fed from Florida’s famous aquifer, which is hard and alkaline, but purely fresh and





ALA Logo by Joanne Norton

crystal clear. Further west, in the Louisiana marshes outside of Houma, I collected them in minnow traps to use as bait for fishing for dinner. This water was so algae tinted that you couldn't see more than a foot down in the water column. It was mostly fresh for part of the day as the tide went out, and when the tide came in, it changed over to mostly marine.

By the way, the sailfins I collected were way too beautiful to use as bait, so I released them!

One diver I met back in the late 1970s talked about finding black spotted sailfins about 5 miles offshore from the Florida Keys, in crystal clear marine water about 20 feet deep, always around cover of rock and coral.

As you can see from the varied habitat in which sailfin mollies are found, they are very adaptable, but when you look closer, the range is still within certain parameters. Generally, the water is hard and alkaline – think Lake Malawi water. In parts of the habitat where the water becomes softer and more acidic, such as the Black River in North Carolina, they are absent or at least very few and far between.

In many places it is estuarine, with a mix of salt water that fluctuates throughout the day from almost pure fresh but hard and alkaline, to nearly full strength marine. And in some places, they dwell in full strength marine water.

So, what does this tell us for keeping them in our aquaria?

Well, first of all, if they are wild caught or wild descended fish, find out what their wild habitat was like and try to replicate that. For the fancy varieties, think Lake Malawi water – hard, alkaline and

clean with low dissolved organics – and you should be good to go.

Notice I didn't mention salt!

Sailfin mollies don't require salt to be happy. That's a myth. Give them hard and alkaline water and do large, regular water changes and they will be happy. Salt can be used as an emergency stop-gap measure if the fish are having trouble, but it doesn't take the place of a good, old fashioned water change!

Another myth is that they need to have warm water.

I've been in North Carolina in February – it can snow! Of course, even a little snow brings everything human to a halt, but think of the fish. They have to survive in that cold water. And they do. Even as far south as Florida and Texas folks can have cold snaps. The fish survive there, too. As long as the change is gradual, sailfin mollies will do just fine in 60 degree water for a while. In fact, sailfin mollies do very well around here in small ponds and tubs outdoors well into September, and possibly even into October, but they do need to come indoors for the winter.

Outdoors you can see why most of the wild fish are covered with those bluish to greenish spots, especially the males. They use them to show off

when sparring with other males and courting females. You'll see a little of this in an aquarium, but nothing like you do outdoors in sunlight! I've sat along the shore of a clearwater stream in Florida and watched male sailfins cavort and display for one another and for the girls. It's something you have to see at least once in your life.

Two males will dance, flashing their huge dorsal to its fullest, and leaning at almost a 45 degree angle to the surface to catch and reflect the sunlight on their metallic spots. They literally twinkle and sparkle like jewels as they circle one another until one or the other finally gives up. The victor then swims over and starts to court the females, which have been watching from the sidelines. The males do a dance where they bend their body in an "S" curve and seem to almost stand on their tail while flashing their dorsal and reflecting the sunlight on their spots.

It is possible they also release pheromones in the water at this time slightly upstream of the courted female that stimulate ripe females to ovulate. If the female is ready, the male will copulate with her and then both swim off, with the male to repeat the dance again with other males and females. If not, the male may chase the female a bit and try to mate with her, but these

thrusts are not always successful. This simple chase and thrust is more common in aquaria, but in larger tanks you can see more natural behavior.

Depending on the habitat, males are more or less colorful. Generally, I've found those in the murky waters of Louisiana to be much more colorful than those of the clear waters of Florida. That makes sense – in murky waters the males have to be more colorful for their rivals and potential mates to see them.

Wild males are varieties of green, olive, silver, yellow, orange, blue and metallic green, varying from habitat to habitat. Some have more or less black speckling. Some populations have red, orange or yellow outlines on the dorsal and





caudal fin, others do not. Wild females are generally green or olive with a whitish belly.

Domesticated fish can range from chocolate brown to coal black to gold to silver to pure white. There are bright red varieties, and those with creamy colored bodies and black fins. There are those that are marbled with black and silver, black and gold, red and white, and lemon yellow and black. There are several different types of albinos – pure white, white with yellow or gold, pure yellow, orange, deep red, or marbled with yellow and red, red and white and gold and red.

Even though the large dorsal is naturally occurring, I've seen males with extra-large dorsal fins. And all of the above colors also come in veiltail and lyretail varieties. If a pet shop were to try and carry all of the potential varieties, they might not have room for anything else!

Now that you're excited about the possibilities, let's look at a tank for the sailfin molly and how to care for them. They are big fish, males topping out at about 4 inches, and females can top 5 inches. That means for a group of them (and if they're happy and you have males and females, you'll soon have a group!), you shouldn't consider anything smaller than a 40 gallon breeder. Better a 55 or 75 gallon tank.

Use crushed coral, aragonite sand, dolomite or some sort of limestone gravel for substrate, and you can use limestone rocks for decorations. Artificial driftwood is fine, but avoid natural driftwood as it will release tannins into the water which will be counter to what you're trying to do. Plants are most welcome,

and various long, grassy plants will be similar to what you would find in the wild. The tank should be brightly lit and have an open area for swimming and displaying. This will provide the males with room for their natural



displaying and courting. It will also encourage algae to grow, which the fish will nibble on all day long, just like they do in the wild.

I should mention here that some sailfins turn into lawn mowers and no plants are safe, but for the most part if they're well fed, they will just graze on the surface of the plants.

Their diet should be largely vegetarian, with a spirulina based flake as a staple diet, supplemented with vegetables like romaine, zucchini, squash, pumpkin, green beans, bananas and similar fare. Once or twice a week give them something meaty like frozen brine shrimp or Mysis. Realize that they are pigs and will eat and hunt food all day long. Generally, when they aren't mating, they are eating. Young fish grow quickly and eat even more per gram of body weight than their parents! Adults tend to ignore their fry, but if they aren't well fed, they may snack on a few of the smallest fry. Even if they are well fed, their habit of grazing all day

long will compete with the fry for food. So, if you want to quickly raise some nice fry, it is best to give them their own tank set up just like the parent's tank.

Since I haven't mentioned it yet, they are livebearers. Females will drop more fry as they grow, and a really big female can easily drop 200 fry. It is best not to move the female when she is close to dropping – generally it is safe to move her up to a week before, but within seven days may cause her to drop early and these fry almost never survive. Never move a female that has squared off – that is to say she looks like she has swallowed a block of some kind. This generally indicates that she is about to drop, and usually will within 24 hours of squaring off.

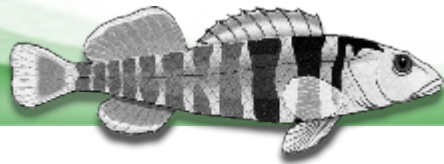
Females generally drop 5 or 6 broods in sequence and then stop carrying fry for several months. This is normal. Usually, there are about 28 days between broods, so after one brood you can calculate when they next one is due and when it would be safe to move the female.

The fry will feed continuously all day and should be given very hard, alkaline water with extra sources of calcium like chicken grit, oyster shell (used for chickens and small caged birds as "grit" to help them digest their food) or limestone pieces in the tank. This will be used by the young males to build their spectacular dorsal fins as they grow. With plenty of food, space and water changes, they can easily reach an inch in size in just 5 or 6 weeks, and two inches by the time they are three months old.

Sailfin mollies are always in demand and do very well at club auctions as well as when used as trade bait with local shops. Other folks will be looking for fish like these spectacular animals for their tanks, too.

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





Eichhornia crassipes

**Non-native
Invader in
Warmer
Climates**

By Micah Issitt



© Wouter Hagens

A FAMILIAR WATER GARDEN plant not native to Missouri is *Eichhornia crassipes*, better known as the “water hyacinth”. This plant acquired a misleading common name and is not related to its namesake hyacinth (*Hyacinthus* spp.), a group of flowering perennials native to the Eastern Mediterranean. *Eichhornia crassipes* is neither North American, nor European, but occurs naturally within parts of the Amazon river basin.

***E. crassipes* and our own native pond plant, *Pondetaria cordata*, are both members of the same family and subfamily, and have characteristics, including similarly hued purple or blue flowers and glossy green leaves that emerge from independent, meaty stalks. Unlike the pickerelweed, *E. crassipes* floats over the water’s surface on spongy inflated stems and its roots may dangle a meter or more below the surface.**

Pond and tub-lovers know this plant well, as it is basically the botanical equivalent of a spawning mop, providing a convenient, and mobile way to collect eggs. The plant is also quite “hungry,” and sucks up a tremendous amount of waste from the water as it rapidly grows and multiplies,

like some sort of floating botanical rabbit.

The widespread cultivation of *E. crassipes* has been an ecological nightmare. The plant is now feral in many of our subtropical states and other parts of the globe, wreaking havoc on ecosystems and clogging natural waterways. This is a prime example of one danger of utilizing exotic plants in landscaping.

Here in Missouri, *E. crassipes* doesn’t pose much of a threat because Missouri winters, even mild ones, are too severe for the tropical *E. crassipes*, which quickly withers and dies in the cooling fall, while it’s cousin

P. cordata shuts down to await the return of warmer weather.

We don’t need to worry about spreading the species to native waterways - for now, I remain wary of global warming, and Missouri gardeners are free to employ *E. crassipes* in our ponds and tubs.

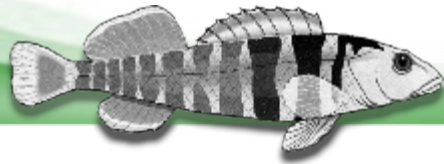
***E. crassipes* and *P. cordata* look great together.** The similarities in the texture and color creates a harmonious scene, and their different structures add to the visual interest of their collective display. Once the water gets to around 23c (~75 F), both species often flower at once, which can create a lovely flush of fresh-looking color across the pond.



Kenya, Kisumu Harbour Hyacinths

© Dr.A.Hugentobler





Jewels of Shaw's Gardens



Victoria Lily *Victoria amazonica*

© GWL



Hardy Lily *Nymphaea* sp "White Hot"

© GWL



Hardy Lily *Nymphaea* sp "Tan-Khwan"

© GWL



Hardy Lily *Nymphaea* sp. Selection

© GWL

Taken by Gary Lange



HORTICULTURE AWARD PROGRAM - Mike Hellweg

July & August 2021



Member	Genus & Species	Common Name	Type	Points
Brian Woodrick	160 Points			
	<i>Bucephalandra sp.</i> Kapuas Brownie Ghost		V	20
	<i>Lindernia rotundifolia</i>	Watermelon Plant	V	10
	<i>Myriophyllum tuberculatum</i>	Red Water Milfoil	V	5
Chuck Bremer	1545 points			
	<i>Zephyranthes citrina</i>	Yellow Rain Lily	OB	20*
	<i>Canna glauca</i>	Red Water Canna	S	15
	<i>Nelumbo nucifera</i>	Dwarf Lotus "Pink Parfait"	OB	20*
Holly Paoni & Kevin Wise	2160 Points			
	<i>Canna cannova</i> Orange Flame	Orange Flame Water Canna	OB	10*
	<i>Canna cannova</i> Red Flame	Red Flame Water Canna	OB	10*
	<i>Egeria densa</i>	Anacharis	OB	5
	<i>Equisetum scorpiodes</i>	Dwarf Horsetail Rush	V	10
	<i>Lobelia chinensis</i>	Chinese Lobelia	OB	10*
	<i>Lobelia chinensis</i>	Chinese Lobelia	V	10
	<i>Lysimachia congestiflora</i> Waikiki Sunset	Waikiki Sunset Moneywort	OB	10*
	<i>Mentha aquatica</i>	Water Mint	V	15
	<i>Myosotis scorpiodes</i>	Water 'Forget-me-not'	OB	10
	<i>Myosotis scorpiodes</i>	Water 'Forget-me-not'	S	15
	<i>Myosotis scorpiodes</i>	Water 'Forget-me-not'	V	10
	<i>Sisyrinchium bellum</i>	Blue Eyed Water Grass	OB	10*
	<i>Canna cannova</i> Orange Flash	Orange Flash Water Canna	S	15
	<i>Canna cannova</i> Red Flame	Red Flame Water Canna	S	15
	<i>Cyperus alternifolius</i>	Umbrella Palm	OB	10
	<i>Cyperus alternifolius</i>	Umbrella Palm	S	15
	<i>Hydrocotyle leucocephala</i>	Brazilian Pennywort	OB	10
	<i>Ludwigia helminthorrhiza</i>		OB	10*
	<i>Ludwigia helminthorrhiza</i>		V	10
	<i>Mentha aquatica</i>	Water Mint	OB	15
	<i>Oenanthe javanicum</i>	Water Celery	V	10*
	<i>Tulbagia violacea</i>	Society Garlic	V	10*
	<i>Tulbagia violacea</i>	Society Garlic	OB	10



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



HORTICULTURE AWARD PROGRAM July & August 2021 - Continued

Member	Genus & Species	Common Name	Type	Points
John Van Asch	830 Points			
	<i>Mimulus ringens</i>	Monkey Flower	OB	10*
	<i>Nymphaea sp. virginalis</i>	White Water Lily	OB	10
	<i>Ruellia simplex</i>	Mexican Petunia	OB	15*
Julia Cross	40 Points			
	<i>Ludwigia species x. lacustris</i>		V	10
Mike Hellweg	3830 Points			
	<i>Eleocharis erythropoda</i>	Red Foot Spike Rush	V	10
	<i>Lysimachia nummularia aurea</i>	Goldilocks Moneywort	V	10
	<i>Rotala sp. nanjenshen</i>		V	15
Mike Huber	705 points			
	<i>Baldelia ranunculoides</i>	Pink Lesser Water Plantain	V	10*
	<i>Baldelia ranunculoides</i>	Pink Lesser Water Plantain	OB	10
	<i>Marsilea mutica</i>	4 Leaf Clover	V	15

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

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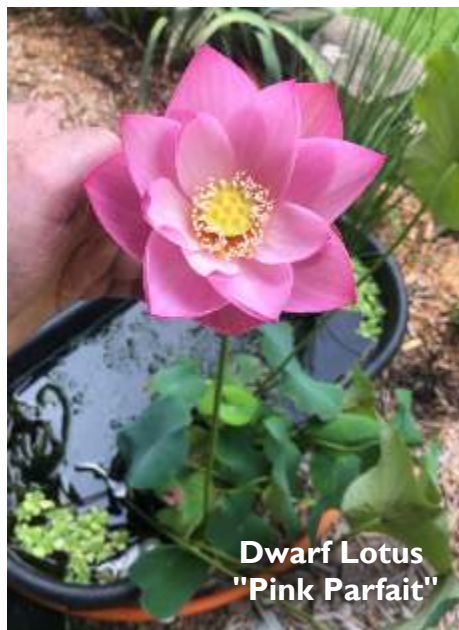


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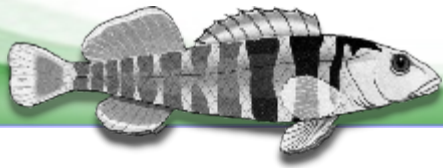


July & August HAP Blooms



Several HAP Blooms didn't arrive or were unidentified and will be featured in the next Darter. Thanks for your Patience!





HAP Seed Article

Aquatic Forget Me Nots

Myosotis scorpioides

-

By Holly Paoni

AQUATIC FORGET ME Nots are a very easy pond, bog, or water garden plant. It grows about 8-10 inches tall then easily blooms, readily seeds, and also propagates readily by rhizome.

It is winter hardy and a great plant to submerge in the shallows near the edges. Just don't put it more than 4 inches below water. Mine is where the sunlight changes throughout the day. Indirect, partial, full, partial, full, indirect- it doesn't seem to mind.

My start was acquired at an area pond store this spring, in an overgrown nursery pot. I divided that pot into a few plants that were scattered throughout a long curved pond basket with sand, gravel and clay mix then plopped it into the pond in early May. By June it had tripled in size filling that planter and creeping down the side and across the pond it was in.

It started blooming constantly in June and hasn't stopped yet. It's now the end of July, and I have 4 planters filled from that first start, and have already sent 2 portions to the meeting mini auction.



Holly's HAP Bloom

Myosotis scorpioides does seed readily and frequently. For me it seemed that every time it got close to seed harvest we had thunderstorms. The next day the stems with maturing seeds, were battered, broken or submerged from the rain.

This plant self seeds, so these hidden seeds, buried in foliage with bright blue flowers, if they land in water, won't go to waste. To my surprise, luckily, I found seeds in one of the portions I had pulled to sell for HAP at the mini-auction!!!

This plant can eventually take things over and become invasive, so keep that in mind when choosing a good spot for planting. The only boggy conditions near me, are in my pond and tubs.

A pair of Hondurian Red Point cichlids spawned in the pot of Creeping Jenny next to the original pot of Forget-Me-Nots. They would take the fry into the Forget-Me-Nots during the day then back to the Creeping Jenny pot in the evening. The Creeping Jenny has taken a beating this year but being able to watch a pair care for their brood that close to the waters surface is worth it...and there are now pieces of the Creeping Jenny and the Forget-Me-Nots all over as well.

It's one thing to watch fish in a tank and seeing them in a tub from a different angle is a nice experience. There is no cave to block the view, just a pit in a pot, about 3 inches under the waters surface.

The Hondurian Red Point fry are feeding on whatever micro organisms, paramecium, etc that are living in and around the Forget-Me-Nots and are sheltered in its stems from the other 31 adults, and school of 10 Rosy Red Minnows, and the last of my *Fundulous olivacious* killie fish in this 300 gallon pond.

Aquatic Forget-Me-Nots are a great plant to try, just be ready to give some portions away- and quickly- as it does multiply rapidly. I'm enjoying it as a new addition to my collection.



Red Points





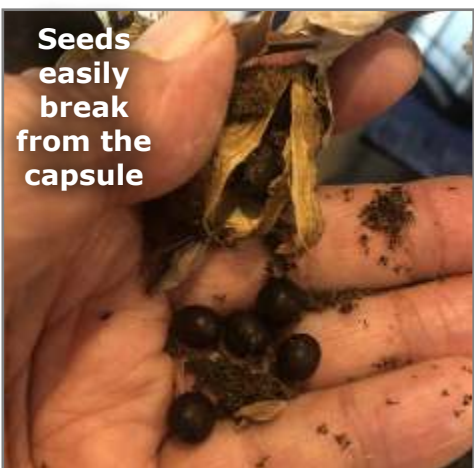
HAP Seed Article

Cannas from Seed

By Connie & Chuck
Bremer



Fruit soon after blooming.



Seeds easily break from the capsule

WE USE A lot of Cannas in our home landscaping and water gardening. They grow well, create a good screen and are colorful around the outside of the house.

Usually we try to over winter the plants after drying the soil by placing the pots in a semi-protected place, such as our garage, and usually they over winter and can be redisplayed the following year. The winter of 2020-21 was severe enough, however, that all froze in the garage.

Cannas were also fairly expensive this spring at local garden centers and sometimes hard to find so Connie, who worked several years at a landscaping/nursery business, decided to sprout our own.

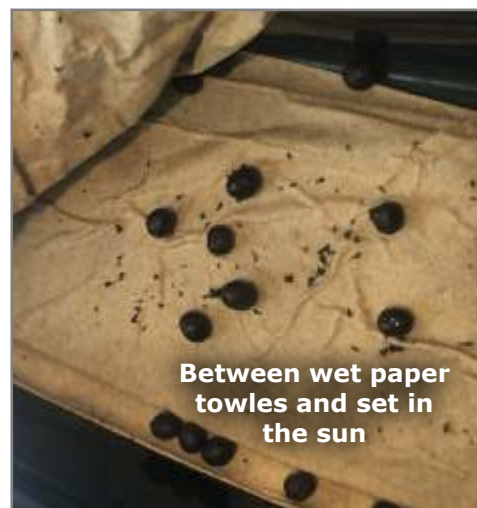
We had collected seeds from several varieties in previous years so had quite a selection of seeds- red and yellow, with both light and dark green and red leaves. Please note that some hybrids made between species will be sterile and flower but never create seed. The hybridization process creates unviable nuclei that are not viable.

Cannas seeds have a very hard outer cuticle that prevents the seed from imbibing water so she used a file to cut through that coat, or scarifyit, to assist the inner embryo to imbibe water and start to swell, placing the seeds between wet paper towels. Initially they refused to sprout inside at temperatures in mid-70's F, however, when moved outside into the warmer temperatures well above 80F they began to sprout within a week.

It would appear that a higher temperature is required to complete the vernalization process. One method recommended by some is to scarify, then pour nearly boiling water over the seed to get them to initiate sprouting. We have not tested this.

The young sprouts grow rapidly when maintained in a warm environment and were soon ready to transplant.

We now anxiously await blooms to affirm the



Between wet paper towels and set in the sun



About 4-6 wks growth

colors. We're hoping to have grown some red blooms with red leaves.



SHOP HOPPING - St Louis Area, 2021



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Malawi Aquatics	Florissant, MO	(314) 830-6460
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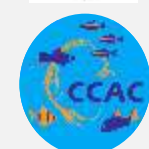
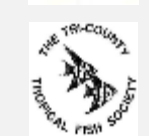
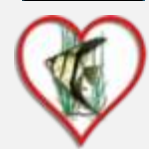


Date Group Club Hopping - 2021 Events

9/16/2021	MASI	MASI-General Meeting St Louis, MO
9/19/2021	MASI	MASI-Fall Swap - Earth City, MO
9/24/2021	NMZNA	Koi Show & Pond Expo - Ellisville, MO
9/26/2021	EIAA	Swap Meet - Swisher, IA
9/26/2021	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
9/26/2021	CCAC	Fall Auction - Indianapolis, IN
9/28/2021	HAAS	Summer Auction - Kansas City, MO
10/3/2021	QCFS	Quad Cities Fish Swap - Davenport, IA
10/8/2021	MAAH	10/8-10, Catfish Cataclysm - Madison, WI
10/17/2021	GWAS	Meeting/Swap - Joliet, IL
10/21/2021	MASI	MASI-General Meeting St Louis, MO
10/22/2021	ALA	ALA Convention - Coral Springs, FL
11/7/2021	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
11/7/2021	MASI	MASI-Fall Auction Earth City, MO
11/13/2021	HAAS	Fall Auction - Kansas City, MO
11/17/2021	GWAS	Meeting/Swap - Joliet, IL
11/18/2021	MASI	MASI-General Meeting - St Louis, MO
11/18/2021	OCA	11/19-21 OCA Extravaganza - Strongsville, OH
12/5/2021	QCFS	Quad Cities Fish Swap - Davenport, IA
12/12/2021	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
12/16/2021	MASI	MASI-General Meeting St Louis, MO

Shaded Lines are Local Events

Nearby Clubs linked to their logo



Logos Hotlinked!

Other links on MASI's

[Linkpage.](#)

Date Group 2022 Events

1/9/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
1/23/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
3/6/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
3/6/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
4/24/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
4/24/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
7/27/2022	LTFC	7/27-31, Aquatic Triple Crown - Louisville, KY
9/18/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
10/7/2022	AACC	10/7-9 AACC Catfish Convention Herndon, VA
10/9/2022	QCFS	Quad Cities Fish Swap - Davenport, IA
10/30/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
12/4/2022	GCCA	Tropical Fish Swap Meet - Hoffman Estates, IL
12/4/2022	QCFS	Quad Cities Fish Swap - Davenport, IA



Continue checking before driving long distances!!





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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.



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



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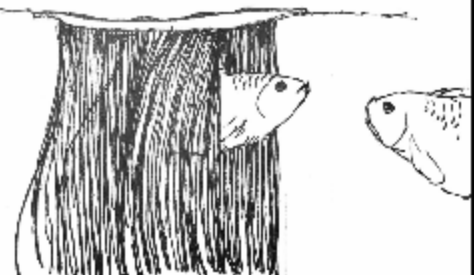
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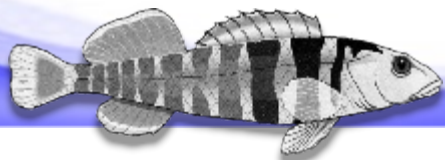
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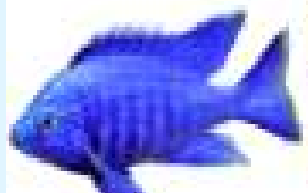
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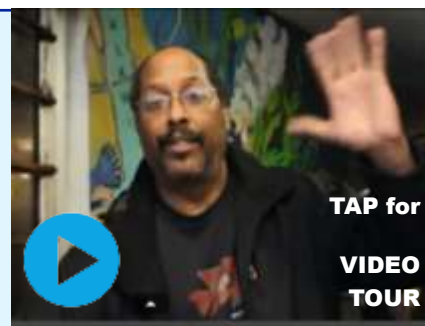
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