

The DARTER



V42-NB

MAY/JUNE 2016

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You can join or renew your membership at any meeting, most club events, by PayPal from the MASI Website's Membership Page or by contacting Ron Huck, membership chair, at 314-481-2915.



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Corys feeding on blackworms
By Rob McLure



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FROM THE PRESIDENT'S TANK

Pat Tosie



BREAKING NEWS

Well, we got it! Thank you Derek, Mike and all the others who helped. MASI is proud to be hosting the 2017 ALA (American Livebearer Association) Convention! Through the hard work of Derek Walker, Mike Hellweg and a few others plus the commitment of even more club members, MASI is bringing another major event to St. Louis! Start planning on what you may want to enter and start getting them in their prime condition!



BREAKING NEWS

Our 2016 show and auction weekend is over and was a successful event thanks to many that helped pull it together and participate. Gary Lange will be the new Chairman for next years event, which promises to be even bigger and better, please let him know if you can help out.

We will have elections in June, so please try to make that meeting and vote!

Don't forget, we have two more auctions and a swap meet this year as well as some fantastic speakers in the upcoming months, be sure to come out and support our activities.

Keep looking below water...

FROM THE EDITOR

Chuck Bremer

Welcome to another Darter. By sending the eSpecial we were able to increase space in this issue for additional fishy articles. If you missed it there is still a synopsis of the Show awards here.

This Darter is full of articles! In fact I reserved some by the more prolific writers for the next issue. Try your hand at writing, If you've got something you're interested in then others will be too. Get involved, it's your club, use the opportunity to

pass on what you've learned, or what you would like to know about. Human interest stories involving the Hobby are quite fun to write and very entertaining to read. Over the past years the majority of Writer' Awards have been to such stories. (*Award recipients win \$100!*)

We're still changing the Darter. In addition to the CurleyQ navigation button video links now have their own icon to make them easier to

spot. They add to many of the stories.

Don't forget the Ads. All are in color and hot linked and some have a video walk thru. PLUS many of them now offer **discounts to MASI members.** Be sure to get your 2016 MASI Membership Card from Ron Huck and take advantage of them. If you're not a member but want to take advantage of MASI discounts at the local stores see the membership section on Page 2 about joining.



Give feedback on ways to meet your needs by using the email linked below or the aid on page 31.

CHUCK B

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

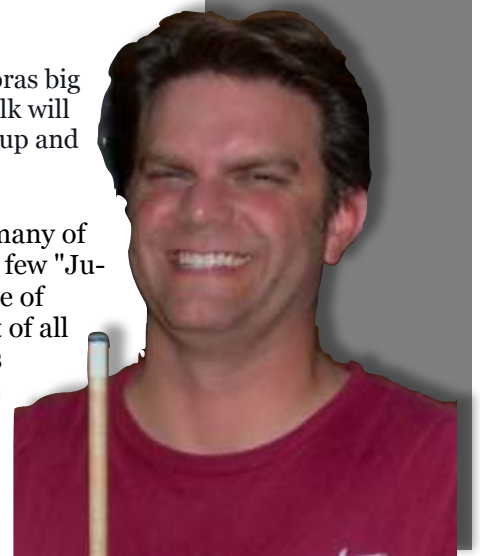


Speaker Rob McLure – May 19th Meeting

"An Overview of Spawning, Husbandry & Raising of Corydoradinae fish"

"Rob will try to update you with the latest Corydoras news, let you know what Corydoras big and small like to eat, and show you breeding tips and tricks that have worked. The talk will show even the most dedicated aquarists something new about the Corydoradinae group and challenge you with Cory trivia!"

He has managed to breed nearly 40 species in the Corydoradinae group to date, many of those multiple times. Rob was introduced to Corydoras when his father bought a few "Julii catfish" at a local pet shop for his younger sister "Julie". After a spawning spree of breeding 25 different fish in one year, out of all the fish spawned that year, the Corydoras paleatus were by far the most fun. Three years later he has more than 80 types of Corydoradinae fish in his home and likely qualifies as an addict of some sort!



Directions to MASI Meeting are on the following page. 

Rescheduled to June 16

Aquascaping for Average People:

How to have a beautiful aquascape in your home without having to be a professional aquascaper

By Jennifer Williams



Jennifer: "I got my first tank when I was seven. Years later, a craigslist ad: "Firemouth Cichlids, bring a net and a bucket", introduced me to formidable former Army Lieutenant filling his bucket with fish, and telling me all about local fish clubs and planted tanks.

I attended my first Greater Washington Aquatic Plant Association (GWAPA) meeting and was completely hooked. I have served on the Board in several positions, and enjoyed participating in events with the other local clubs and the true friendships I have made in this hobby. I currently sit on the board for the Aquatic Gardener's Association (AGA). Now I have several wins from aquascaping contests, including most recently a repeat win at the 2015 Aquatic Experience/AGA Aquascaping Live! Invitational Competition in Chicago for my 75 gallon entry collaboration with Rachel O'Leary and her daughters.

I am an avid fan of Blue-eyed Rainbowfish and enjoy keeping and breeding them with my eclectic assortment of fish. To pay the electric and water bills that accompany all of the assorted gallons of aquatic madness, I work as a Graphic Designer...and also enjoy fast cars as a former professional drag racer and purring cats as a long-time volunteer/rescuer with the 4Paws Rescue Team."



VICE PRESIDENT'S REQUEST

Gary Lange



Nominations for Executive Council 2016/2017

MASI's new year starts in July of 2016. We're looking for members to run for council for the 2016/2017 session. We have four

officer positions elected annually: President, Vice President, Treasurer and Secretary. We also have 6 council member positions. The officers and the executive council members help guide the club in activities such as our annual show, monthly speakers, auctions, swap meets and other items concerning our club.

The council meets about once a month usually the 2nd Saturday evening after the MASI general meeting but changes to

accommodate our board members. We take turns having the meetings in our homes so each council member hosts one of those meetings. Being a member of council is a great way to infuse new ideas to help our club grow and also to get to know members better. It's also a great way to pick up ideas for your own fishroom as many of our current executive council members have been keeping fish for a long time. We need an active council, people who are willing to try new ideas and also to volunteer to put

those ideas into action. Our council meetings are open to our members so attend one and see what it's all about. Let the hosting member know so that there are enough chairs available. If you would like to run for council please call or email me as soon as possible.

Elections are at the June meeting and nominations close at the May council meeting. We need a slate of candidates as soon as possible. If you have any questions please don't hesitate to contact me.

General Meeting Location

MASI meets on the third Thursday of each month at 7:30 PM.



GOAL:
\$2000+

Current:
\$ 650



a 501(c)(3) organization

MASI Challenge!

Next Council Meeting, May 28 @ 7:30PM at Home of Gary Lange

Future MASI Programs:

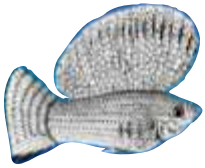
July - Fishy Trivia Nite, Contest & Prizes!!

September - SuperBowl Show & Social - Q & A Sharing Fishkeeping Tips & Tricks



Ian Fuller, world renowned Corydoras expert speaks to MASI October 20, 2016!!





The American Livebearer Association and Missouri Aquarium Society bring the Next **ALA Convention** May 4-7, 2017 to **St. Louis**



FANTASTIC FISH:

- Gonopodium Galleria & Livebearer Swap Meet, Vendors of fish, equipment and foods, New Rare Fish, Fish Room tours
- Huge Livebearer Auction
- Also in association with the **Gateway Guppy Association**

Sell Fish and refill your tanks with new species!

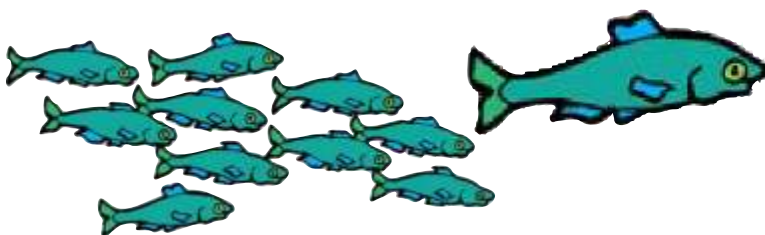
TREMENDOUS PROGRAM:

- Huge ALA and IFGA shows, Goodeid Working Group meeting, ALA National Meeting
- Keynotes of collecting, identification and care, Wine Tasting and Fellowship with fellow Livebearer nuts

EASY ACCESS:

Watch the ALA Website for a link to Further Details!!

Or Email ALASTL2017@gmail.com



MASI INSULATED FISH BAG



Transport your fish in style!

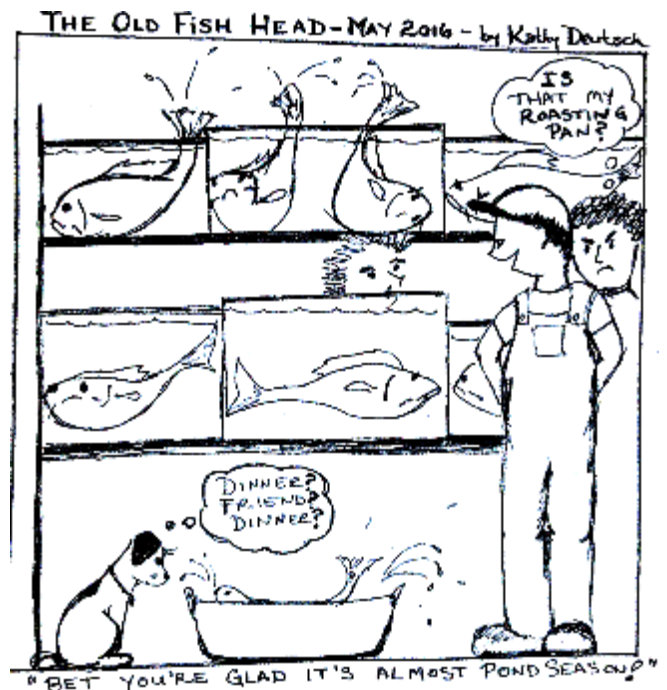
Insulated, rolls up for easy transport, expandable, fits in luggage, carry your fish anywhere and keep them safe from temperature changes while displaying your pride in your club!

22" x 16" x 12" - holds several fish bags

Made of 100% recycled materials

Get yours today, before they're gone! Available at each monthly meeting or other events while they last!

\$70



Synodontis Eat Platys!!

and other Lessons Learned from my fish tanks-April 2016

Kathy Deutsch

Due to the way our tri-level was built, I **don't have the luxury of a fish room**. With over 14 tanks scattered over 3 floors, it is more of a fish house. Which sounds great until it is August and humidity reigns. Or January and the water levels can drop an inch a day. And since the tanks are in living areas, not hidden away behind the closed doors of a fish room, we are very aware when things ("deaths/fights/algae") happen.

I have an adopted Synodontis, about 8 inches long, who lives in a PVC pipe stack created by MASI founder, the late Ralph Wilhelm. Ralph built things to LAST. This pair of pipes are stuck together, with a divider in each one. They are a thing of beauty and the Syno loves them. He had been through several moves in my house, from a 94 to a 20. And in each case, he comes out long enough to splash and make some noise so I feed him. Then he goes back into the pipe. Feeling guilty a couple months back, I decided to make him a retirement home. I pictured him lolling around, swimming in and out of his pipe with ease, while dither fish swam above him. Catfish love dither fish; the little fishes' actions indicate if all is well or if the catfish need to be on guard. The fish got a grand 60 gallon tank, with some 1 inch platys above him. Lovely. I never saw the demise of the live bearers. But I did see the Syno swimming upside down at the top of the tank, slurping. And the other 23.75 hours of the day he sits in

his pipe. So he has been banished to a 29, alone, and a mixed group of fish and plants now occupy the 60. **Lesson learned: even fish with down turned mouths will gulp live food. Even if they have to turn upside down to do it.**

In my dining room, with (older) hardwood floors, we have a 56 gallon tank that sits near the window. **Lesson**

I have a Synodontis, about 8 inches long, who lives in a PVC pipe stack

learned: think about the physicality of cleaning a deep tank. I climb on a step stool and reach down, and the floors are covered with old towels to catch the drips. And because I am short, only the top 3/4 of the glass gets clean. An old wooden spoon with a scrubby attached gets the rest of the algae off. And that lasts 3 days, before the algae starts again.

Lesson learned: tanks by windows turn green (which is actually a benefit to some fish, who will eat it off the glass).

Here is a hard lesson learned: even a week of quarantine may not be enough. No matter how healthy the new fish I bought looked, no matter whose fish they were, they were not quarantined long enough. By me. And I lost some very dear fish. In the attempt to save the tank, I hastily was doing water changes daily. Do not rush a water change. Take your time, watch the siphon and the buckets, and especially move the dog beds. Cover everything with towels. **Lesson learned: dog beds hold an amazing amount of dirty fish water**, and when you pick them up they dump it all over your hardwood floor.

It seems that in any hobby there are new things to learn, no matter how long you have been doing them. That's what keeps the hobby interesting, the learning. I tell myself that as I double-wash the utility towels, design a better scrubby, and count the snails that are overtaking the plants in one tank. Once I conquer these problems, I know there will be new and different mistakes to make. But **when the tank lights are glowing and I can watch a whole tank of fish enjoying themselves, it really is worth the trouble.**



In 2006 this little beauty took the tropical fish hobby by storm and they are still highly sought after. They are a very striking fish, especially the males. For you trout fisherman out there, they look a lot like a micro sized brook trout. When they were first imported they were known in the trade as "Galaxy Rasboras", but this name would change very quickly.

Only three other fish are found in their



Wikipedia: CPD original discovery location was near Ho-Pong Myanmar at 3,400 ft above mean sea level.

Myanmar (formerly Burma), is a Southeast Asian nation of more than 100 ethnic groups, bordering India, Bangladesh, China, Laos and Thailand.

habitat, a species of *Yannilus* loach, a *Microrasbora* species (possibly *rubrescens*) and a dwarf snakehead *Channa*. The dwarf snakehead is their only natural predator. Due to its pond mates and the galaxy's striking similarity to *erythromicron*, it was thought that they were

The Celestial Pearl Danio

- *Danio margaritatus*

Lonny Langione

**BAP Report from the
Aquarium Club of
Lancaster County
May, 2012 issue of TANK
TALES**

a *Microrasbora* sp., so they were offered

by the name at the time of discovery, *Microrasbora* sp. "Galaxy" or "Galaxy Rasbora".

It was in 2007 that Tyson Roberts did a formal description of the fish and named it *Celestichthys margaritatus*, which translates to "heavenly fish adorned with pearls." In 2008 a more comprehensive study showed that along with *Microrasbora erythromicron*, these little beauties were indeed members of the *Danio* genus. Today they are referred to in the hobby as "CPDs"- short for Celestial Pearl Danio - and will be referred to as CPDs in the balance of this article.

CPDs discovered and collected in Myanmar (Burma) in heavily vegetative shallow ponds near the town of Ho-Pong. The ponds are clear and fed by local streams and natural springs. The water is 12" deep with a temperature of 72 - 76 F, a pH of 7.3 and the conductivity of 250 microsiemens. CPDs are a chubby little fish compared to their *Danio* counterparts. The adults really max out at around 1" or so. A very small package of beautiful color and intricate markings, CPDs are sexually dimorphic. This



Celestial Danio male

by Cisamarc - Wikipedia commons



means males and females are visibly different in their markings and color, although this can be tough to determine in unconditioned younger specimens.

Mature males exhibit a deep blue body color and the females are a lighter blue to light green color with white bellies. Golden spots cover their bodies with the

CPDs have spawned for me using three different set-ups.

male's spots being more pronounced. Deep red-orange coloration outlines the male's dorsal and anal fins as well as both of the lobes of the caudal fin, with these colors being much lighter in females. Blue / black parallel lines are present in the male's fins as well. Males in breeding dress will also show the red-orange color in their bellies. When females are in spawning condition they will show a dark spot at their vent. The caudal peduncle, the part of their body where the tail begins, is also wider in than females.

Spawning CPDs is pretty simple. The first thing you will notice about CPDs is they do not swim fast in open water other danios. They like their plant cover and they tend to move in short jerky spurts within the plants, and at times they will stay in same spot for long periods of time. Courting by the males sometimes appears to be aggressive but it doesn't result in any damage to the females. CPDs do not scatter their eggs indiscriminately like other danios. They tend to breed in little "sessions". The male attracts the female with his colors and I have observed them embracing like anabantoids.

One problem while breeding is other CPDs in the tank may eat some of the eggs from the spawning pair. I suggest LOTS of Java moss in the tank when breeding. If you do not java moss you can use any colorfast soft yarn cut in to 12" pieces, much like a killifish breeding mop only larger. I purchased my from Rachel O'Leary, known to many as Msjinkzd. You can access her website at www.msjinkzd.com. Rachel quarantines all of her fish before selling them and she feeds them well while in quarantine. I

picked them out and got what I thought to be 5 males and 5 females.

CPDs have spawned for me using three different set-ups. Using a bare bottom 5 1/2 or 10 gallon aquarium, I fill it one half with water from their tank and new water. I filter these tanks with a well established sponge filter that stands off the bottom of the tank.

Next I put the CPDs in the tank with the java moss and feed them well for a few days. I fed mine diced live blackworms, live baby brine shrimp, diced frozen bloodworms and slightly crushed flake food. After about a week I do a 50% water change on the tank. Two to three days after the water change I either take out the CPD breeders and leave the java moss in the tank, or I take the java moss out of the tank and quickly pass a small siphon hose over the bottom of the tank to get any eggs laying on the bottom. I use this water to put the java moss in a new tank. When leaving the CPDs in the tank I immediately put another large piece of java moss in with them so they are comfortable. That covers the first two methods.

My new and most successful method is using a breeding box. The breeding box



Celestial Danio female

From Wikipedia Commons

is made with glass and is about the size of a 5 gallon aquarium. The breeding box sits inside of a 10 gallon aquarium, the bottom of the breeding box sitting five inches above the bottom of the aquarium. The breeding box has a plastic mesh bottom, made from plastic craft mesh you can buy at craft stores. There are 1/16" holes in the mesh to allow the eggs to drop down to the bottom of the tank away from the parents. I also put a large piece of java moss in the breeder box.

I condition the CPDs before putting them in the breeder box and continue to feed them well while they are in the box. After 2 days I do a 50% water change. Three days later I take the java moss out,

catch the breeders and put them in another tank. I then put the java moss back into the tank with eggs. With this method I always get a larger number of fry, which is my main goal.

The fry hatch in 3 days and stay on the bottom of the tank under the java moss, feeding on the infusoria that live in the

My most successful method is using a breeding box.

moss. After about 5 days the fry will start to emerge and hang on the sides of the tank. It is at this time I start to feed them. I feed them infusoria and green water for a few days. After they are visibly swimming in the tank I start them on baby brine shrimp.

The fry grow pretty fast for small fish. I change 50% of their water twice a week. A trick to prevent siphoning the fry while doing the waterchange is to put a small piece of filter fluff on the end of the siphon held in place with a rubber band. Once the fry are fuller bodied I move them to a 30 gallon tank half full of water. I gradually fill the 30 gallon to the top over a period of a couple weeks as I do water changes. The young color up in stages and are not fully colored until they're three months old.

Producing large quantities of CPDs isn't as easy as it is with their Danio counterparts. You just have to be diligent in following a breeding program. A few years after the CPDs their natural habitat was fished pretty hard to supply the market for them and they became dangerously scarce.

In 2007 the Myanmar government banned the exportation of CPDs, but it isn't clear as to how well this ban was enforced. Since then they have been found in other areas of Myanmar. The CPDs that are mainly available to the hobby are still coming out of the wild. It is my hope that they do not go the way of many other species of tropical fish and become extinct in the wild.



Grindal Worms

-

The Most Bang for the Buck Live Food!

Charley Grimes



My top choice as a live food for feeding my fish is Grindal Worms. A long list of why I think of Grindal Worms as my favorite cultured fish food.

1. The fish really like Grindal Worms.
2. Young fish grow rapidly on a Grindal Worm diet
3. Grindal Worms are the easiest and most productive live food I have ever raised
4. Grindal Worms are the least expensive live food I have ever raised

I now have about over 80 tanks in use, rather than 100+. About half of them are 15 gallons or under in size because I no longer raise African Cichlids in commercial quantities. My favorite fish are smaller Tetras, Barbs, Killies and Livebears-- and I raise these fish as a fun hobby.



Early on in my fish raising hobby, and, by the way, that is a long time ago, I became intrigued with raising and using live foods.

Eventually I determined I wanted a fish hobby rather than a live foods raising hobby and eventually settled for Microworms, Grindal Worms, and White Worms as useful and easily cultured live foods to raise for feeding my fish.

I would would like to maintain and have available daphnia, infusoria/paramecium, green water, earthworms and vinegar eels, but so far - and we are talking 50+ years - raising these very useful live foods has eluded me over the long term.

I had, early in my using Grindal Worms as a mainstay of my fishes diet, been impressed by how fast young fishes grew and prospered when Grindal Worms were a large part of their diet.

My 'rule of thumb' soon became, once I raised newly hatched fry beyond the stage of tiny foods like powdered dry foods, paramecium, and newly hatched baby brine shrimp, feed them Grindal Worms! I could observe them start growing by leaps and bounds.

A few years ago while reading a friend's issue of the British Catfish Association (BKA) bulletin, I read an article on raising Cory Catfish. What caught my interest was his assertion that Grindal Worms were the fishes main diet from the time they were were enough to eat Grindal Worms, for the rest of their lives in his tanks.

I sort of adopted this article as support and vindication of my position that Grindal Worms were the single best food

for tropical fishes that don't get larger than the body size of an adult Cardinal Tetra. My guideline now includes a gigantic list of Tetras, Rasboras, Barbs, Killifish, Livebearers, etc.

Successful culturing Grindal Worms is the easiest, least expensive, and most productive of any live foods I have raised.

I got my start of Grindal Worms from another local hobbyist about 40 years ago. He was raising his Grindal Worms on a medium of peat moss in a cottage cheese container that he sat on an open shelf in his fishroom. He told me that Grindal Worms do best at room temperature and that he fed his 'pablum' that he sprinkled on the surface of the medium and then sprinkled water on the

Material List:

1. Plastic Shoebox
2. Pringles Lids
3. Ground Peat Moss
4. Dry Baby Cereal
5. Spritzer

pablum to dampen it and then covered the damp pablum with a little square of single strength glass that he had cut.

I did exactly as he said and it worked.

Over the years I have also used bagged potting soil as a medium and sizes up to sweater boxes and big plastic coffee cans lids to cover the pablum ---- I was raising gigantic amounts of Grindal Worms!





Let's fast forward to the present and I'll relate how I raise Grindal Worms for my fishroom now.

I now raise my Grindal Worms in six covered shoe boxes. The medium I use is a milled peatmoss that I mix up by hand in a five gallon bucket with enough water to make it damp. Its then placed into shoe boxes to a depth of about an inch and a half. I buy Magic Worm Bedding (they have 3# boxes or 25# bales of milled peat moss) from Magic Products, Amherst Junction, Wisconsin) because I like it better than the peat moss from garden stores.

I now use six shoe boxes with covers. If the lids fit too tightly, I drill a half dozen small holes in them---too small for fruit files! Each shoe box will accommodate six of the clear plastic lids from Pringles tubes --hint, if you can locate a six pack of the snack size Pringles, you can accumulate the plastic lids more quickly.

As pablum is no longer available, I feed the Grindals 'mixed baby cereal', a dry baby food widely available in grocery stores, in the baby section. I sprinkle some of the baby food flakes onto the underside of the lids and then spritz them

with water using a water bottle pump thingie I scored from the laundry section in the grocery store. The lids are put on the medium with the wet baby food in contact with the medium.

Once the culture gets well established, the Grindal Worms will be reproducing at an amazing rate and will consume their food within 24 hours.

In a couple days, the Grindal Worms will find the baby food and will accumulate on the bottom of the lids. There will be oodles of worms sticking to the Pringle lids. These worms can be washed off directly into a fish tank or- my preferred method- rinse each lid into a small bowl



I maintain three worm cultures and harvest from only one of the cultures on a rotating basis, but feed baby cereal to



each worm culture every day. The amount of worms produced this way will impress the dickens out of you.

If you feed Grindal Worms to fish in a bare bottom tank, the fish will eat all of the worms. In a planted tank, some of the worms will be lost in the gravel.

The Grindal Worms that aren't eaten right away will stay alive in an aquarium for 24+ hours.



of water and then pipette the worms into the fish tanks. Refeed the culture and you will have Grindal Worms ready to harvest in another 24 hours.

You can feed your fish Grindal Worms from one shoebox for six or eight weeks if you feed the Grindal Worm culture every day. You should then split the culture into two cultures or toss half of the existing culture and make up the difference with new medium. Mix it well.



Culture photos by Charley Grimes
Fish photos courtesy of Central Florida Aquarium Society & Blogspot



Vegetative Reproduction of *Aponogeton crispus*

- A real BAP Challenge

Gary Lange

Vegetative reproduction for most aquarium plants is a relatively easy process. For our stem plants like *Ludwigia*, *Hygrophila*, or *Rotala* it's quite easy. You just "feed" them light, keep the water changed and soon the plant is doubled or tripled in size. Cut off the top of the stems and more growth pops out of the cut. Soon 4 becomes 8 becomes 16+. With good lighting and fertilizer they can easily become weeds.

We all know that for *Cryptocoryne* you carefully plant them and hope that they



Successful Growth of 2 Plants

don't melt. If they melt, oh well, leave the roots alone and soon your plants will grow back. After a few more months, if they like you, they'll produce runners under the gravel and tiny replicates of the parent plant will appear. Depending on the species this can be brain dead easy or extremely difficult, yeah just like some fish!

According to Kasselmann there are currently 55 known species in the genus



2 Crowns before division

Same for *Vallisneria*, easy but often the process takes mere weeks instead of months. And if you are producing something like *Anubias* for HAP well then you measure your growth in seasons! After a few seasons your plant will have a longer rhizome than before and you can cut it in two and submit it for HAP. You get the idea here. For most of our aquatic plants to get vegetative reproduction all you have to do is wait! It's a totally different case with the genus *Aponogeton* and vegetative reproduction.



Splitting with a Razor Knife



Aponogeton. All of them except for *Aponogeton rigidifolius* have a tuber. *A. rigidifolius* has a rhizome and is relatively easy to vegetatively propagate. Think Anubias and add a few months.

There is one *Aponogeton* that is quite easy to reproduce vegetatively - *A. undulatus*. Instead of a flower it produces a long stalk-like petiole which eventually forms a tiny tuber and plant. This can be accomplished according to Kasselmann in 2-6 weeks.

For the other species in this family one must figure out how to get more than one area of growth out of that tuber. You just can't pluck off a leaf and stick it in the gravel and expect it to grow. The tuber has to be nicked with a sharp razor and hope that the plant will start producing new growth.

In some ways it's almost easier to get your HAP points with an *Aponogeton* by getting it to flower, pollinating the inflorescence with a paint brush and then waiting for the seeds to develop. I have played a bit with *Aponogeton longiplumulosus* (see photos) and the Madagascar Lace plant. For the Madagascar lace I had both a beautiful purple inflorescence on one group of plants and then many years later a much lighter colored inflorescence. For now all I have to show for that effort are some decent photos of the flowers. They are still a work in progress.

Another method for getting vegetative growth from the tuber is: luck. Buy enough bulbs and you might find one that



Splitting sequence:

1. Find plant with 2 growth points
2. Carefully cut them apart
3. Replant separately
4. Hope the spit bulb doesn't rot
5. Thank your Lucky Stars if it worked!!

is producing vegetative growth in two different places. Once both growth sites are big and healthy you can pull out your sharp single edged razor blade and separate the two plants. Wait about a month to make sure that the cut heals and that both plants survive the operation. It is important that for our HAP program that you take a picture before and after you separate the plants so that you have proof that both plants originated from the same tuber.

For my *Aponogeton crispus* bulb that had two growth sites this was really easy. This plant was really large, over 20 inches in length before I cut the bulb. The cut healed very nicely and both plants are thriving with leaves now over 24 inches in length. I will again return to another *Aponogeton* species of some sort and see if I can't get some viable seeds out of it or see if I can't coax a secondary vegetative growth with a few sharp cuts. If you're looking for more of a challenge from your plants an *Aponogeton* will surely keep you engaged.

References: Aquarienpflanzen - Christel Kasselmann -2010 (and also 2003 English Version)



Aponogeton longiplumulosus inflorescence



Madagascar Lace - Purple



M Lace - Violet



Snails in the Planted Tank

- Boon or Bane?

Mark England

Love 'em or hate 'em - no one seems to be in the middle when it comes to snails in the aquarium. Snails make interesting pets, eat leftover food and algae, and add variety to the fish aquarium. They're inexpensive or free, easy to maintain, and hardy. Snail lovers maintain they don't eat healthy plants. What more could you want?

What else could we want? Some of us want them to die! All of them! For us they are loathsome, horrible pests that damage live plants and breed until the tank is covered with the things. They are a plague upon our tanks!

If viewed a bit more objectively, there's truth on both sides and a lot depends on the particular type of snail. Not all are



Apple Snails

evil; not all are angels. There are many, many species available in the hobby and most aquarists are not particularly knowledgeable about which species they

may have. All snails need hard water to maintain their shells. They're not fussy as to temperature or habitat. Snails generally make good scavengers and will eat some algae types, but may eat live plants, too.

Apple snails are popular and several genera are grouped under this name or are also known as "mystery" snails. These will definitely eat leftover food and plants of all types and so will do best in a fish only tank. Eggs are laid above the water line where they are easily visible, but removing what you see is not generally an effective means of population control. Perhaps the most desirable is the spixi species, *Asolene spixi*, which is known to prey on pond snail, ramshorns, and their own young.



Pond Snail

Pond snails are the worst, in my opinion. They're small, drab, and multiply faster than you can believe. Typically, they're hitchhikers on aquatic plants or driftwood that trusting aquarists have not bothered to treat or quarantine. Even with conservative feeding, they seem to find enough food to support a big enough population to always be in view on the front glass.

Ramshorn snails have much in common with pond snails. They breed quickly and can get out of hand even with careful feeding of your fish. Well known as plant eaters, there is little to be said in their favor.

On the other hand, nerite snails have many fans. They are said not to eat plants, they don't breed in freshwater, and they are excellent at cleaning glass and plant leaves. The several species come in interesting varieties such as horned and zebra. They come from a tidal habitat and are known to wander away from the tank, but can survive out of water for quite some time.

Malaysian trumpet snails, or MTS, as you may see them called on forums, are another snail in the good graces of plant lovers. They don't eat plants and feed primarily on detritus. Nocturnal, they spend the day burrowing in the substrate, another benefit. The burrowing aerates the substrate helping to prevent anaerobic activity. These snails are livebearers and can multiply quickly.



Ramshorn Snail

If you haven't already guessed, I fall into the snail hating portion of the hobby, but there's one snail I love - the assassin snail. As its name implies, it is deadly....to other snails. It burrows into the bottom and awaits a victim. Once another snail is spotted, it bursts into action (well, what passes for it in the snail world) and "chases" down the prey. They are quite efficient and can rid a tank of every single pest snail in a short time. Once the tank is rid of snails, the assassins are content to eat detritus, but also love freeze dried tubifex or frozen bloodworms when they can get them. Some hobbyists say assassins will also take young shrimp, but I've not seen it happen.



Nerite Snail

Assassins are not the only means to control unwanted snails. There are a number of ways to prevent snails from getting into your aquarium even if you



keep live plants. One of the benefits of tissue cultured plants is that they're snail free.

Another method is quarantining the plants and treating the quarantine tank

" Potassium permanganate - this comes in many different strengths. Mix enough crystals in water to make a deep purple mixture. Soak the plants for 10-20 minutes and rinse in water with dechlorinator added.

tank keepers. If you run CO2 on your tank, you can remove all fish and shrimp and increase the CO2 to about 3 times the recommended level, say 90 ppm. This is deadly to snails, fish, and shrimp. Simple aeration can bring down the levels after treatment.

When treating a tank with chemicals, exercise caution. A successful treatment may leave lots of dead snails to decompose which will need to be removed.

If you like snails, Malaysian trumpet snails and nerites seem to be the most problem free. If you love snails like I love snails, which is to say - not at all, then you have choices. I recommend bleach dips



Malaysian Trumpet Snail

with a snail remedy from your local fish store. These remedies usually have copper in them in concentrations deadly to all invertebrates such as shrimp. Copper is the nuclear option. Copper is difficult to remove from substrates so a bare tank is advised. Even if you don't keep shrimp, I don't suggest copper remedies for a planted tank.

Plant dips or baths are an effective means of ridding new plants of pests. There are a number of chemicals used and all are more effective on snails than on snail eggs. You may wish to combine a bath with a quarantine period. Here are several methods:

- Bleach - one part plain bleach to 19 parts water for 2-3 minutes. Rinse well in water with dechlorinator added. There is risk of damage to delicate plants.
- Hydrogen peroxide - undiluted 3% solution for 5 minutes or a 1.5% solution for 15-30 minutes.
- Salt - aquarium or kosher salt, not table or iodized. 1 cup per gallon for 15-20 seconds. Do not put plant roots in the bath. Rinse well.
- Alum - 1 to 3 tbsp. per gallon for 2-3 hours, up to 12 hours. A less aggressive treatment that may not be effective on eggs.

If preventative measures fail and your tank is infested, there are still options. Assassin snails work well. There are also some fish species that eat snails. Members of the loach and puffer families will eat them. In addition, you can trap snails by putting zucchini or cucumber pieces in the tank or a soda bottle and waiting for the snails to gather. Remove the food and the snails with it.

Flubendazole is a veterinary worm medicine that is effective on snails and said to be safe for shrimp. Charles Harrison, one of our members, has supplies available. One quarter teaspoon of 10% powder to 20 gal. is an effective dose.

Besides copper, there is a second nuclear option recommended by some planted

and quarantine for incoming plants. For infestations in existing tanks, assassin snails work very well.

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Potassium Permanganate - KMnO4



Assassin Snail



CICHLIDS FROM LAKE NICARAGUA

MIKE LIU

Text and Photos
Reprinted from:

THE NEW ENGLAND
CICHLID

New England Cichlid
Association

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Nicaragua is a Central American nation located between the Caribbean Sea and the Pacific Ocean. The country is known for its lakes, volcanos and beaches. Many well-known Central American cichlids in the hobby are also found in the country. Some are very common, such as the Convict Cichlid (*Cryptoceros nigrofasciatus*), while others are



rare and hardly seen in the hobby, such as the Arrow Cichlid (*Amphilophus zaliosus*). There are some species that are almost totally unknown, such as *Am-*

philophus astorqui, which is related to the Midas Cichlid (*Amphilophus citrinellus*).

Lake Nicaragua is a large fresh water lake situated in the southwest end of the country, and has a diverse population of cichlids. The lake is rather shallow, with an average depth of only 40 feet. There are several old, volcanic islands in and around the lake. A larger island, Ometepe, contains two volcanos, Concepcion which is active, and Maderas which is considered dormant. Concepcion rises up over 5000 feet, and Maderas rises up over 4500 feet above the lake. Together, they create a mysterious and picturesque backdrop.



Ometepe Island; Concepcion left, Maderas right.

Many people keep cichlids from Lake Nicaragua in small groups, pairs or as

There are cichlids
which are defined as
omnivores,
herbivores,
insectivores, and
piscivores.

single fish. Most of the time, I try to maintain a single breeder pair in a tank. For obvious reasons, most people cannot keep large schools of these relatively large and boisterous cichlids in a single tank. But the relationship between these fish is quite complex and diverse in the lake. For instance, *Astatheros rostratum* is reported to practice “crèche” spawning behavior, which describes colony-type or group nesting in a species. *Astatheros rostratum* adults will group their fry into a large colony, thereby dividing the parental duties of guarding and finding food for the fry.

This strategy also provides protection because large groups reduce the ability of a predator to focus on one fish, creating confusion. In another unusual behavior, the small but fierce *Hypsophrys nematopus* is reported to help protect fry of the much larger *Parachromis dovii* from marauding cichlids. In turn, the *P. dovii* do not eat fry of the *H. Nematopus*.

I have never observed cichlids in the wild, but what a fascinating experience it would be to sit back, relax and watch what happens at the bottom Lake Nicaragua, or other body of water where cichlids are plentiful. My closest encounter watching wild cichlids was at the zoo in San Antonio. There, I watched huge Texas Cichlids spawning on the concrete sides of the hippo exhibit pen. About every 48” another large pair of Texas Cichlids was guarding a plaque of eggs, and swimming between the hippos. As I strained over the barrier to get a closer look at the cichlids, I realized I was also looking down the gut of a huge hippo with mouth wide open. It could have easily swallowed me whole had I fallen into its mouth.



Underwater scene of Midas Cichlids

The numerous cichlid species found in the lake occupy every ecological niche, having evolved specific and complementary feeding strategies. The above mentioned *Hypsophrys nematopus* is an algae scraper and is found in areas where algae is abundant. *Hypsophrys nicaraguense* naturally forages over sandy bottoms and is mostly found near rocky habitats close to large sand beds. *Amphilophus citrinellus* is a generalized feeder, or omnivore, and can be found in a variety of habitats. Like all



animals and plants, cichlids evolve to fit their environments, and cichlids are unusually adept at adaptation, giving them tremendous advantages in the fight for survival and reproduction.

In Lake Nicaragua, there are cichlids which are defined as omnivores, herbivores, insectivores, and piscivores. Luckily for us, these cichlids will eat almost anything offered in the aquarium. Any commercial food is eaten with gusto. But it is never a good idea to feed only one kind of food. For instance, cichlids that eat mostly vegetable matter may develop bloat if given too much protein. Conversely, a sand sifting cichlid that eats snails still consumes vegetable matter found in the bottom detritus. I feed a variety of commercial foods to all my cichlids, whether Central American, South American, West African or East African. I tend to use foods with a high level of shrimp or krill, and foods with a spirulina base. These seem to work well for daily cichlid maintenance. Many people have their own favorite fish foods and supplements but it's always a good idea to provide variety.

There are fourteen species of cichlids from Lake Nicaragua that are routinely found in the hobby.

Below is a photo log and summary of each.

Parachromis dovii, commonly known as The Wolf Cichlid, is a piscivore; that can grow to over 24" and is one of the largest cichlids known. It is a robust cichlid with a very large gape-type mouth. Males can develop a large nuchal hump. Having kept this species, I can attest that it is easy to keep and will spawn at a much smaller size of 5" to 6". It does, however, require a very large tank, and any tankmates must be equally large and robust, or they will almost certainly be consumed. *P. dovii* is found rather commonly in the hobby,



but many times it outgrows its tank and is its owner.

Parachromis loisellei, Loiselle's Cichlid is a piscivore; they can grow to 9" or 10" and are an attractive yellow fish with intricate black markings. This fish is often confused with *Parachromis friedrichstahli* and *Parachromis managuense*, which both look very similar. I have little experience with *Parachromis*, but I understand that *Parachromis loisellei* is the smallest of the three similar fish.



Parachromis managuense, the Jaguar Cichlid, is a piscivore; which can grow up to 18". The intricate markings vary from one fish to another, but they are very attractive as well as rather aggressive. It used to be a very popular "pet" fish, developing strong bonds with their keepers. They need very large tanks, and like other large piscivores, must have tank mates of equal size, which makes keeping them even more challenging.



Vieja maculicauda, the Black Belt Cichlid, is an herbivore which can grow to 12" or 14". Coloring often varies from one population to another and it has one of the widest distributions of Central American cichlids, even able to live in brackish and salt water. I found this cichlid to be rather aggressive and have only kept this species once.

Amphilophus citrinellus, the Midas Cichlid, is an omnivore which can grow to 14" or more. Like many other cichlids, dominant males can develop a large nuchal hump (enlarged forehead bump), the purpose of which is still not certain. Most wild caught fish are olive-to-beige with darker vertical barring, while a few are orange, orange and white, or orange piebald. The orange varieties are popular in the hobby. They are relatively easy to keep, but care must be taken when a pair is preparing to spawn. Males get extremely aggressive at that time, and often damage or even kill the female.

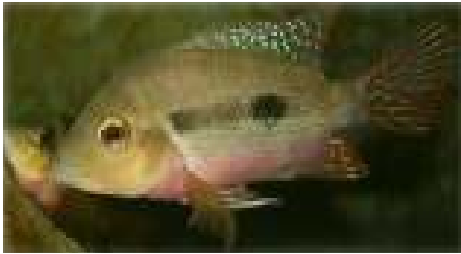


Amphilophus labiatus, the Red Devil cichlid, is an herbivore which can grow to 12" or more in a large tank. It closely resembles the Midas Cichlid but is more streamlined and less high-bodied than the Midas. They have enlarged fleshy lips, indicating they forage over algae covered rocky areas. This trait disappears in the aquarium. You will find solid orange, orange and white, and piebald varieties in the hobby.

Astatheros longimanus, the Rose-breasted Cichlid, is an herbivore, which



can grow to 8" or 9". Males are larger than females with more turquoise spangles in the unpaired fins. Both sexes have a rosy pink belly. These are docile fish that should be seen more in the hobby. They are easy to keep and will spawn at about 2.5" size.



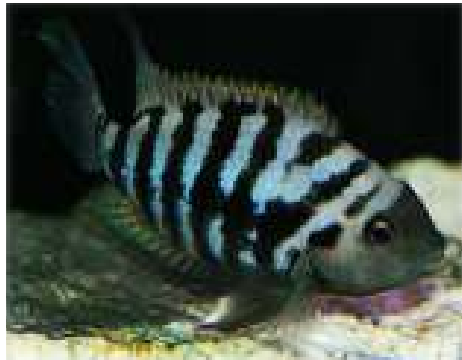
Astatheros rostratum, the Spangled Cichlid, is an herbivore which can grow to 9" or 10". Many consider this fish to be one of the most attractive Central American cichlids. As they get older, their iridescent spangles become more intense. They spend a lot of time sifting through the substrate looking for food. Not often seen, this fish is always scooped up when available.



Archocentrus centrarchus, the Flyer Cichlid, is an herbivore; they can grow to 8" or 10" but is more commonly seen at 5 inches or even smaller. It is very peaceful and swims about more than other cichlids, making it an excellent aquarium resident. The yellow coloring can vary in intensity, but it typically always shows several dark vertical bars extending from the ventral region up to the base of the dorsal fin.



Cryptoheros nigrofasciatus, the Convict Cichlid, is an insectivore which can grow up to 8" but is more commonly seen at 3"-4" in the hobby. They are ferocious when guarding fry and exhibit excellent parental behavior. There are many variants from all across Central America and many wild strains have been collected. It's not considered a desirable fish by experienced fish keepers, but it is the consummate cichlid when it comes to spawning behavior. Its major fault is that it breeds too successfully!



Cryptoheros spilurus, often called the Blue Eyed Cichlid, is an insectivore that grows up to 5" or 6". They are fairly peaceful and are excellent parents. There are many related fish also called the Blue Eyed cichlid, but this is the original. It does not have flashy colors and is rarely seen in the hobby anymore.



Herotilapia multispinosa, also known as the Rainbow Cichlid, is an herbivore that stays small, growing up to 4". They are peaceful and can be mixed with many other types of larger cichlids. Most fish are primarily yellow but some specimens develop an orange-yellow color. This would be considered a beginner's cichlid, but it worthy of a place in a mixed community cichlid tank. It's really quite an attractive fish and is easy to keep and spawn.

Hypsophrys nicaraguense, the Nicaragua Cichlid, is an herbivore which can grow to 9" or 10". Males are larger

than females, and the scales are edged in black, giving it an attractive reticulated pattern. Female's fins are not edged in black, but they generally have a more intense turquoise coloring in the head. With the yellow-orange body color, it is one of the most attractive Central American cichlids.

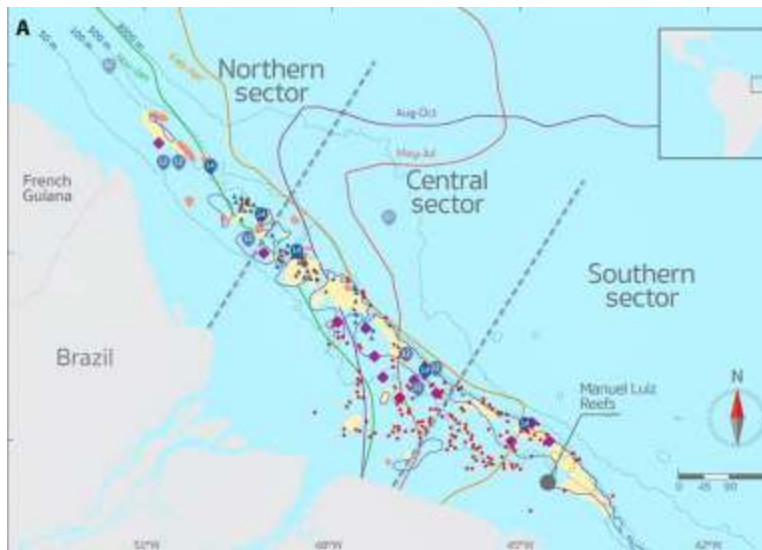


Hypsophrys nematopus, usually called 'Neets,' is an herbivore that can grow to 3" or 4" and has a white body with one black vertical band. When spawning, the colors reverse, with the body turning black and the vertical band turning white. It is much more attractive when spawning, and is a



fierce parent. It also has the nickname "Poor Man's Tropheus" because the spawning coloring resembles a *Tropheus duboisi*.





branching, crustose benthic marine red algae that resemble coral.²

According to the original report in *Science Advances*, the reef is important to study because it may yield insights into how reefs respond to sub-optimal conditions, such as the sediment plume from the Amazon. Such conditions are increasing worldwide. The river affects salinity, pH, light penetration, and sedimentation.

In fact, this reef is already in danger. Brazil has sold oil drilling rights at the Amazon's mouth and some 20 blocks are already producing oil and some are thought to be right on top of the reef.

A team of scientists from Brazil and the US have reported finding a previously unknown reef, 600 miles long, located at the mouth of the Amazon River where it flows into the Atlantic Ocean. The reef covers 3600 square miles, an area larger than Delaware, and reaches from French Guiana to the Brazilian state of Maranhão.

The reef's discovery was unexpected because major rivers typically produce gaps in coral reefs. However, in this case, the fresh water plume remained relatively shallow and the reef developed below it.

Catherine Osborn of NPR reported "Coral reefs usually don't thrive in muddy waters, like the mouth of the world's largest river, but the Amazon has a freshwater outflow. It appears to have produced a reef with over 60 species of sponges and 73 species of fish, spiny lobsters, sea stars, and other ocean life."¹ The science team has not yet fully identified 29 different types of sponges.

Project coordinator Fabiano Thompson told NPR in an email that it primarily consists of sponges and rhodoliths, rather than coral. He adds that more than 300 square miles still need to be mapped.¹ Rhodoliths are colorful, unattached,

600 Mile Reef Discovered At Amazon's Mouth

Mark England

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Brief Photo Recap



Catfish Groupings:

1. Wide Mouths
2. Vacuum Mouths
3. Sucker Mouths



Lynn Jacks from Dyersburg, Tennessee and Paula McVann from Springfield, MO carried off the big Raffle Prizes. Each winner lives nearly exactly 240 miles from the Auction venue! What are the Odds of that?



Thank You from the 2016 Show Chair



Kathy & Assistant Kevin

show was a success. It was well-attended and ran smoothly.

In 2017, Gary Lange will be the MASI show chairman. It is a big job, and one that takes a full year to accomplish. If you enjoyed this year's show and are curious how we put one of these together, volunteer to work for the show. You will learn a lot.

And it is not too early to think about what fish you want to put into the show in

2017. Conditioning is also a year-round job. Water changes, avoiding stress (don't add other fish to the show fish tank), and of course, proper feeding.

The Friday night of the show, we held a special fish auction, with fish donated by Imperial Tropicals. Over \$200 was donated through that auction. Our treasurer is holding that money separate, and we plan to use it for a local fish-related charity or research. I could use your

help on this. If you know a researcher, charity or other worthy use for the money, please let me know ASAP.

Segrest also donated fish, which we ran through the Sunday auction. Thanks to Pat Tosie for picking up the fish, bagging, auctioneering and managing Friday. Thanks to auction chairman Mike Hellweg for letting us put MORE fish in the auction.

-Kathy Deutsch

I have said it many times: the

2016 SHOW AWARDS

Show Classes and Top Places

Class	Place	Entry	Owner	Sponsor
Aquascaping	1	Planted Tank 2	Gary Lange	Chris Mohrle
School, Family or Biotope	1	Corydoras metae★	Mike Slater	Ray "Kingfish" Lucas
All Other Fish	1	Ameca splendens Male	Daniell Kinder	Dave Thies
Old World Cichlids	1	Julidochromis dickfeldi	Chuck Bremer	Debbie Sultan & Tom Corradini
New World Cichlids	1	Discus★	Mike Slater	Bob & Lora Watson
Killifish/Rainbows	1	Pseudomugil conniese Male	Gary Lange	Jack Heller
Fancy Livebearers	1	Red Dragon Guppies★	Lora Watson	Lynn Jacks
Egglayers	1	Congo Tetra★	Ron Huck	Mike & Angela Hellweg
	2	Carassius auratus★	River Kinder-Russell	
Fancy Betta splendens	1	Halfmoon Double Tail★	Keaton Walker	Lynn Jacks
	2	Blue Marble Betta	Michael Gray	Kathy Deutsch
Catfish - Cory Types	1	Aspidoras albater	Chuck Bremer	Matt Schauer
Catfish - All Other	1	Brown Bristlenose	Chuck Bremer	Mike Huber
Photography	1	Melanotaenia rubivittatus	Gary Lange	Dave Rush
Arts & Crafts	1	Apistogramma Laptop Bag	Chuck Davis	Kathy Daly
Anabantoids - Wild Types	1	Pearl Gourami	Ron Huck	Andy White

★ Indicates additional award.



2016 Major Placings

Award	Fish	Owner	Sponsor
Best Fancy Betta	Blue Marble Betta	Michael Gray	Kathy Deutsch
Reet Thomas Livebearer	Red Dragon Guppies	Lora Watson	Lynn Jacks
Ralph Wilhelm Catfish	Corydoras metae	Mike Slater	Steve Edie
Best Cichlid	Discus	Mike Slater	Kathy Deutsch
Best Junior	Carassius auratus	River Kinder-Russell	Chuck Bremer
Best Fish in Show	Congo Tetra	Ron Huck	Klaus Bertich
Judge's Award	Halfmoon Double Tail	Keaton Walker	Robby Simmons



Time to begin planning another successful Event Weekend for 2017!

Don't forget to volunteer ideas and effort to help make it another success!!

Planning for the 2017 Spring Show

April 28-30th, 2017



Make a List!

Fish I want to show!

- 1) _____
- 2) _____
- 3) _____

That's a list of the three fish that you have in your fishroom or might get in the near future to be brought to the show. We always wait until September or October to start talking about the show when we really need to be talking about it even earlier.

Now is a perfect time to start grooming that nice looking swordtail for April of 2017. If you have a good cichlid, especially a male it might be time to take him away from the other fish so he can keep his fins in pristine condition. You certainly have opportunities to buy fish at our monthly auctions, our August 14th auction and the swap meet,

September 25th. Put that list of the three fish you want to show and put under a refrigerator magnet or where you have your aquariums. Start giving those fish extra care now and getting them nice and fat.

Please commit to bringing fish to our show, you won't regret it. Bob and Lora Watson entered the 2016 show for the first time and had a great time. We're looking forward to seeing their entries for next year. Come along and join in on the fun.

Volunteer to be a part of a show committee. With just one person running the

show they often forget many of the important details. It's just darn near impossible for one person to remember it all. Monthly show meetings are really not possible. Although we might have one or two meetings it will be much more practical to communicate via email or conference calls.

We're looking for your input into everything concerning the show weekend. Please mark it on your calendar, and ask your boss for the weekend off, you won't regret it.

See you at the show April 28th-30th, 2017!

Gary Lange

...and don't forget to

Patronize this years' Show Sponsors.

Together they donated over a Thousand Dollars toward the success of this event!!





**Ron Huck's
Congo Tetra
Best Fish in 2016**



2010



**Selection of Past
Best of Show**



2004



199X



Missouri Aquarium Society, Inc.

2015 Major Annual Awards



2015 Hobbyist Society Service Award
2015 Hobbyist Show Champion
2015 Ralph Wilhelm Writer of the Year
Dirted Substrate Tanks - January
Darter

Pat Tosie
Jim Miller

Holly Paoni



Missouri Aquarium Society, Inc. Proudly Presents Our Highest Award:

MEMBER OF THE YEAR 2015

Mark England
Darter Editor 2014 & 2015

We Thank you Very Much and Congratulate you on your selection, Mark.

Sincerely, *The MASI Membership*



Chris



Kevin



Deb & Tom



Pat



Mike

Unfortunately, not everyone was available for a photo.

2015 MASI Breeder's Awards

General Breeder - 50 Points

General Breeder - 50 Points

General Breeder - 50 Points

General Breeder - 50 Points

Master Breeder - 300 Points

Master Breeder - 300 Points

Master Breeder - 300 Points

Grand Master Breeder - 500 Points

Grand Master Breeder - 500 Points

Supreme Grand Master Breeder
2000 Points

Most Exalted Grand Master Breeder
3000 Points

Most Exalted Grand Master Breeder
3000 Points

Tremendousest Grand Master Breeder
6500 Points

Breeder of the Year Award - 28 Spawns
CARES Breeder of the Year - 12 Spawns

Scott Campbell

Chris Mohrle

Todd Powers

Scot Roach

Chuck Bremer

Mike Huber

Kevin Wise

Chuck Bremer

Debbie Sultan & Tom Corradini

Jerry Jost

Jim Miller

Pat Tosie

Mike Hellweg

Mike Huber

Cory Koch



2016 BREEDER'S AWARD PROGRAM - Steve Edie

March

Member	Genus	Species	Common Name	Points	Bonus	CARES	Total
Mike Hellweg	Boraras	micros *	Yellow Polka Dot Rasbora	20	5		6604
	Cryptoheros	myrnae #@	Topaz Cichlid	0		10	6614
	Hemigrammus	filamentosus *	Phoenix Tetra	15	5		6634
	Hemichromis	sp. "Moanda"	Peaceful Jewel Cichlid	10			6644
	Tanichthys	albonubes "Fan Ling" *@		5	5	5	6659
	Tanichthys	thacbaensis #@	Lemon Fin White Cloud	0		10	6669
	Xenotoca	melanosoma #@	Blackspot Jewel Goodeid	0		15	6684
Jerry Jost	Corydoras	stenocephalus *	Huangana Cory	10	5		2337
Jim Miller	Aspidoras	spilotus		15			3084
Chris Mohrle	Amatitlania	nigrofasciata	Convict Cichlid	5			55
	Pundamilia	nyererei "Makobe Island" @		10		10	75
Hannah White	Astronotus	ocellatus	Oscar	20			20
Kurt Zahringer	Melanotaenia	parva @	Lake Kurumoi Rainbowfish	10		10	665
	Poecilia	sp. "Xiloa" *		10	5		680
	Procatopus	similis "Kumba" *	Variable Lampeye	15	5		700

April

Member	Genus	Species	Common Name	Points	Bonus	CARES	Total
Chuck Bremer	Ameca	splendens #@	Butterfly Goodeid	0		15	597
	Gambusia	holbrooki "Flamingo Park"	Marbled Gambusia	5			602
	Ilyodon	whitei "Rio Huamita" #@		0		15	617
	Skiffia	bilineata #@	Two Lined Skiffia	0		20	637
	Skiffia	multipunctata "Lago de Comecuaro" *@	Spotted Skiffia	20	5	20	682
	Xenotoca	eiseni "San Marcos" #@	Red Tail Goodeid	0		15	697
	Xiphophorus	milleri #@	Catemaco Platy	0		10	707
	Charles Hoppe	Poecilia	sp. "Domestic Molly"	Gold Panda Molly	5		
Mike Slater	Corydoras	metae	Bandit Cory	10			10
	Poecilia	reticulata	Blue Delta Guppy	5			15
John Stollhans	Julidochromis	ornatus	Golde Julie	10			310
	Labidochromis	caeruleus	Yellow Lab	10			320
	Tramitichromis	intermedius	Green Faced Lethrinops	15			335
Kevin Wise	Ameca	splendens @	Butterfly Goodeid	15		15	780
	Julidochromis	ornatus		10			790

* = First MASI species spawn (5 point bonus)

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

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

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

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

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

Sources: Cal Academy - <http://research.calacademy.org>

CARES - <http://www.carespreservation.com>

AUCTION CHAIRMAN'S MESSAGE - MIKE HELLWEG

Another great spring weekend is now behind us. Thanks to all who helped make it such a successful event, especially the auction on Sunday. I hope everyone enjoyed themselves!

We're going to try something new for the next auction in August - the hotel will have a concession stand out in the walkway in front of the auction room. They'll sell

sandwiches, chips and drinks. Hopefully this will do well for the folks who don't like leaving the auction room while the bidding is running hot and heavy!

The next auction will be the Summer Auction which is August 14, and the Fall Auction is October 30.

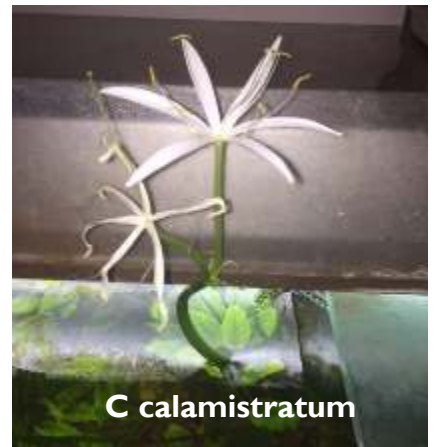
Mike - auktion@missouriaquariumsociety.com



2016 HORTICULTURE AWARD PROGRAM - Mike Hellweg March & April

Member	Genus	Species	Common Name	Type	Points
Charles Hoppe	150 points				
	<i>Aponogeton</i>	<i>ulvaceus</i>		IB	10
	<i>Crinum</i>	<i>calamistratum</i>	Waffle Leaf Bog Lily	IB	20

Reproduction Key: V = Vegetative, OB = Outdoor Bloom, IB = Indoor Bloom, S = Seedling



Now is the time to put your Pond and Bog plants out!

2015 MASI Horticultural Awards

Novice Aquatic Horticulturist	Daniell Kinder
General Aquatic Horticulturist	Chris Mohrle
Advanced Aquatic Horticulturist	Chris Mohrle
Senior Aquatic Horticulturist	Bruce Mayhew
Senior Aquatic Horticulturist	Chuck Bremer
Master Aquatic Horticulturist	Kevin Wise
Most Illustrious Grand Master Aquatic Horticulturist	Mike Hellweg
2015 Green Thumb Award 29 Propagations	Chuck Bremer



2016 Service Points Tabulation - Ed Millinger

As your points tabulator I would like to ask that you print your name on the sign in sheet at the general meetings. I am not very good at deciphering handwriting and some people are left off of this list due to either poor handwriting or poor deciphering. If I misspelled your name, I apologize in advance. You earn points every time you participate in a club activity. Feel free to let me know if you have done something I might not be aware of. You should be able to find your name with a little luck. To see how points are earned [DOWNLOAD THE MEMBERSHIP HANDBOOK](#) or find it on the web site under WHO WE ARE after the mailing address. You must have earned at least 3 points by now to be included on this list.

ED

First	Last	Service	Show
Larry	Allbright	26	
Jim	Amsden	5	
Shawn	Bellman	7	
Klaus	Bertich	8	
Chuck	Bremer	74	115
Connie	Bremer	6	
Scott	Bush	14	
Scott	Campbell	5	
Tom	Corradini	12	
Kathy	Daly	8	
Steve	Deutsch	47	
Kathy	Deutsch	47	
Steve	Edie	38	
Mark	England	22	
Marlon	Felman	3	
Michael	Gray	15	
Al	Grudzinski	9	
Charles	Harrison	35	
Sue	Harrison	8	
Mike	Hellweg	54	
Angela	Hellweg	7	
Dan	Hoermann	6	
Mike	Huber	8	
Ron	Huck	30	40
Daniell	Kinder	63	15
River	Kinder		15
Cory	Kinder	5	
Carl	Kling	3	

First	Last	Service	Show
Cory	Koch	11	
Gary	Lange	28	80
Dan	Ludden	4	
Leroy	McCreary	22	
Al	Merkley	11	
Jim	Miller	4	
Ed	Millinger	37	
Chris	Mohrle	12	18
Jerry	Montgomery		5
David	Palmer	3	
Dwayne	Peters	8	
Scot	Roach	9	
Diamond	Dave Rush	34	
Nick	Scarlatis	4	
Randy	Shell	13	
The Incredible	Robby Simmons	27	
Mike	Slater	4	40
Rick	Smith	5	
Rose	Sonderman	4	
Debbie	Sultan	17	
Marvelous	Mark Theby	41	
Guy	Tinker	4	
Rick	Tinklenberg	5	5
Mr Prez - Pat	Tosie	83	10
Jim	Troester	7	
John	Van Asch	28	
Derek	Walker	11	
Keaton	Walker	5	15
Bob	Watson	37	
Lora	Watson	47	20
Kevin	Wise	59	10
Norb	Wright	4	
Kurt	Zahringer	17	5



**2015 Hobbyist
Society
Service
Award - Pat
Tosie**



CLUB HOPPING - Steve Edie

- May 27-29 - Chicago: Greater Chicago Cichlid Association - Cichlid Classic
- May 27-29 - Denver: American Killifish Association - Annual Convention
- Jun 9-12 - Portsmouth, NH: North American Native Fish Association - Annual Convention
- Jun 23-26 - Tulsa, OK: International Betta Congress - Annual Convention
- Jul 16 - Kansas City: Heart of America Aquarium Society - Swap Meet
- Jul 16 - Urbana, IL: Champaign Area Fish Exchange - Summer Auction
- July 7-10 - Cincinnati: American Cichlid Association - Annual Convention
- July 7-10 - Chicago: North American Discus Association - Annual Convention

Aug 14 - St Louis: MASI - Summer Auction

Sept 24 - Cedar Rapids, IA: Eastern Iowa Aquarium Association - Fall Auction

Sep 25 - St Louis: MASI Swap

- Sept 25 - Alsip, IL: Greenwater Aquarium Society of Chicago - Fall Auction
- Oct 13-16 - Herndon, VA: All Aquarium Catfish Convention
- Oct 21-23 - San Antonio, TX: Federation of Texas Aquarium Societies - Annual Convention
- Oct 29 - Alsip, IL: Greenwater Aquarium Society of Chicago - Fall Swap

Oct 30 - St Louis: MASI Fall Auction

- Nov 5 - Kansas City: Heart of America Aquarium Society - Auction
- Nov 4-6 - Chicago: Aquatic Experience
- Nov 18-20 - Cleveland: Ohio Cichlid Association - Extravaganza
- Nov 19 - Peoria, IL: Tri County Tropical Fish Society - Fall Auction

2017 MASI Dates to Save

- Feb 12 - St Louis: MASI Winter Auction
- Apr 28-30 - St Louis: MASI Spring Show Weekend
- May 4-7 - St Louis: American Livebearer 2017 Conv.
- Aug 6 - St Louis: MASI Summer Auction
- Oct 1 - St Louis: MASI Swap Meet
- Nov 12 - St Louis: MASI Fall Auction

A Lot going on this Year!

Check with individual clubs for more details
Links to most are on our [webpage](#).

Convention Ads Hotlinked!



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MOST or LEAST

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Sell	Charles Harrison	Thiosulfate crystals (Chlorine Remover) - pound	\$4.00	(314) 894-9761 charles@inkmkr.com
		OTO double strength Chlorine/Chloramine test kits - 4 ounce	\$12.50	
		Flubendazole, 10% powder 25 grams	\$20.00	
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		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	
Buy	Mike	Small Styro shipping boxes - 12 x 12 x 12 or a little bit smaller. If your company uses them and throws them away, save them! Bring to the meeting or I'll come pick them up	Free	636-240-2443

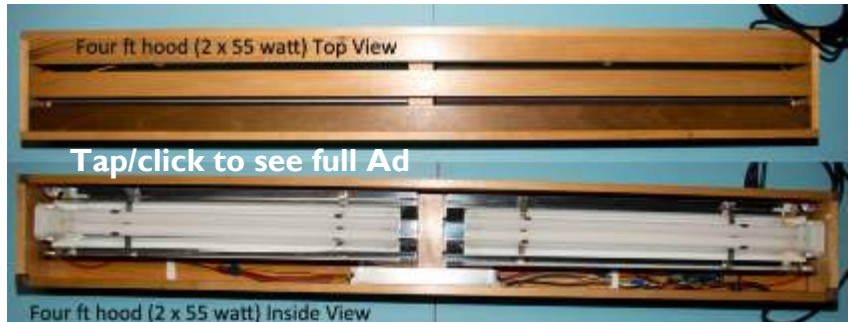
Sell: Power Compact Lighting - Contact: Gary Lange – gwlange@sbcglobal.net 314-412-7636

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See all:

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- 48" x 6.5" wide x 3.5" tall with 2 x 55 watt PC bulbs. 4 Ft tank - 55 or 75 gallon tank - asking \$70.
- 48.25" x 9.75" wide x 3 3/8th inch tall with 4 x 55 watt PC bulbs. High Light 4 Ft tank, asking \$120.



Recommend glass tops, ask how to build one.

Sell: Water Storage Tanks - Contact: Chuck Bremer - bremercd01@gmail.com

- 3 - 300 Gallon upright tanks, fit through a 36" doorway and stand upright. 35.5"x76" with 2.25" threaded fitting at bottom and 8" fill/access in top.
- 1 - 100 Gallon upright tank, 22"x64", wide access through top.

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MASI Members of good standing can place a fish related classified ad in the Darter for free. Free ads may be up to 30 words in length. Send your ads to the editor. The 30 word ad can run each issue unless specified how long to run, in which case it will run as requested.



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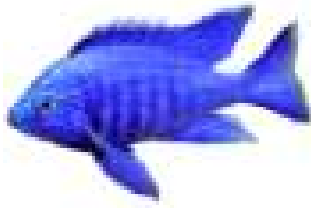
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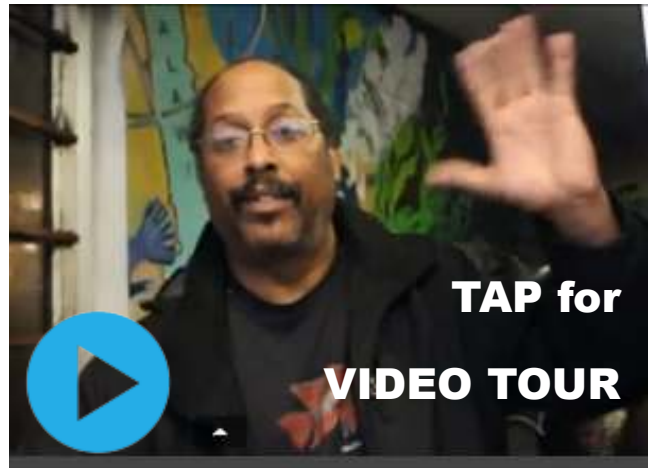
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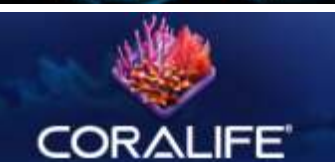


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Darter Addendum:

As the official bulletin of the Missouri Aquarium Society (MASI) the Darter is used occasionally to distribute proposed changes to the way we do business that must be acted upon by the membership. The attached Addendum enumerates a change the MASI Council feels is necessary to secure our classification with the Federal Income Tax Service as a 501 (3)c - Not For Profit organization.

This Addendum also contains a few other minor changes to the ByLaws being proposed at the same time. There will be discussion of these proposed changes at the May general meeting and a vote by the membership to accept or reject them at the June general meeting.

Proposed changes are explained below and ByLaws after amendment appear on subsequent pages:

Proposed Changes to the MASI Bylaws Submitted by the MASI Executive Council for a vote at the June 2016 General Meeting

Why do we need to make changes to our bylaws?

In order to comply with the rules of the Internal Revenue Service, we are required to add a statement to our bylaws about Inurement and Propaganda. The inurement rule basically means is that we cannot pay anyone (member or not) EXCESSIVE compensation for services or products or for any reason at all. We can still reimburse folks for any reasonable expenditure as we always have done. The propaganda rule simply means that we cannot campaign for or against any person or legislation. Both of these are REQUIRED of 501 (c) (3) organizations. This is why we are adding Article 14 to the Bylaws. Neither of these are changes to the way we've always operated, it's just that they are now codified in our bylaws.

While reviewing the bylaws, we noted a few other changes that needed to be made to the bylaws to keep them current with how we operate. Again, none of them make any real changes to the way we operate, they simply more correctly reflect the way we actually operate MASI. They are enumerated below:

Article 1:

While researching our history, we discovered that we are actually registered as the Missouri Aquarium Society, not as the Missouri Aquarium Society, Inc. So we are making that change in our bylaws to more correctly reflect our true registered name.

Article 2:

Nowhere in our bylaws did we mention the hobby. We are adding the last line "and to promote the hobby of aquarium keeping" as that is an important part of who we are and what we do.

Article 3:

We dropped the classification of Charter Member as all of our charter members are deceased and it is no longer a relevant membership category.

Article 4:

Most of us have always insisted that in order to run for an Office (President, Vice-President, Secretary or Treasurer) one needed to be a member in good standing for at least one year, but it was not codified in our Bylaws. We have now added that.

Article 9:

Section 2: We dropped the requirement that before one joins MASI, they must attend a meeting first
We also dropped the Section defining Charter membership as all of them are now deceased and it is no longer needed.

Article 11:

Section 1: In keeping with the change to Article 4, we are adding the words "provided they have been a member in good standing for one year prior to running for office".

Article 14:

This is the new Article being added to our bylaws on inurement and propaganda as described above. This change is required by the IRS.

Articles 15 onward:

All Articles are simply changed by adding one number to reflect the addition of Article 14 above.



Bylaws of The Missouri Aquarium Society (MASI)

Incorporated 1959, Revised 2016

Article 1: Name:

The Society will be called the Missouri Aquarium Society.

Article 2: Purpose:

The corporation is formed and shall be operated exclusively for charitable and educational purposes as set out in Paragraph 501 (c) (3) of the Internal Revenue Code or any subsequent corresponding provision of the Internal Revenue Laws of the United States; more particularly, for the propagation and care of tropical and marine fishes; the instruction and dissemination of information on the propagation and care of tropical and marine fishes to the public; the purchase of supplies and equipment for the maintenance and operation of aquaria for educational, charitable and scientific purposes, to promote the keeping of aquaria for purposes of occupational therapy; and to promote the hobby of aquarium keeping.

Article 3: Membership:

The Society shall be composed of Regular Members, Family Members, Professional Members, Honorary Members, and Corresponding Members as shall have been admitted to the membership hereafter in accordance to the provisions of the by-laws.

Article 4: Officers:

The officers of the society shall consist of a President, Vice-President, Secretary, and Treasurer. Term of office shall be one year. All officer candidates shall be members in good standing for at least one year prior to running for office.

Article 5: Executive Council:

The affairs of the Society shall be charged to an Executive Council composed of 13 members:

- 1) The four Officers of the Society
- 2) The Show Chairman, appointed by the President at the first general meeting of tenure in office
- 3) The Editor of the publication of the Society, appointed by the President at the first general meeting of tenure in office
- 4) The Auction Chairman, appointed by the President at the first general meeting of tenure in office
- 5) Six (6) members at large elected from the floor.

Termination of tenure:

Failure of an Executive Council member to attend 3 council meetings (unexcused absences) in any one year shall be deemed neglect of duty and grounds for expulsion from the Executive Council.

Article 6: Affiliation:

Affiliation with other Societies is allowed when desirable and approved by the Executive Council and the membership.

Article 7: Dissolution:

If for any reason it becomes necessary to dissolve this corporation, the assets held for charitable, educational and scientific purposes shall be applied so far as feasible toward carrying out the purposes stated in the articles of incorporation, excluding similar societies not Incorporated.

Article 8: Amendments:

These By-laws may be altered or amended by a two-thirds plus one majority of all voting members present, if a quorum is present. (A quorum shall consist of two-fifths of all voting members.) The proposed amendment shall be first submitted in writing to and approved by a majority of the entire Executive Council. The proposed amendment shall be published in the bulletin prior to voting.

Article 9: Membership:

Section 1) Eligibility: Any person interested in tropical fish and related subjects.

Section 2) Regular Members: Admittance to membership shall be considered valid after a membership donation is made.

Section 3) Honorary Members: Honorary membership may be conferred on any individual for outstanding contributions to the Society by:

- a) Recommendation of the Executive Council.



b) Recommendation of a member and approved by the Executive Council.

- Section 4) Family Membership: Family membership shall be limited to 2 adult votes (15 years of age or older).
- Section 5) Professional Membership: a professional member shall be considered as one actually engaged in the buying and selling of tropical fish and/or aquarium supplies for resale as a means of livelihood.
- Section 6) Corresponding Member: a corresponding member is one who receives the club publication. A corresponding member shall not have a vote concerning club elections or functions.
- Section 7) Privileges: The right to vote shall be restricted to members of the Society (except as defined in Sections 4 & 6). A member must be present to vote.
- Section 8) Termination of Membership: Membership in the Society may be terminated at any time by a two-thirds majority vote of the Executive Council. Failure to donate prior to the close of the February general meeting will be deemed sufficient cause to suspend privileges.

Article 10: Membership Donations:

Annual donations shall be set by the November Executive Council Meeting and published in the club bulletin prior to the January general meeting.

Article 11: Officers:

- Section 1) Eligibility and Tenure of Office: Any member of the Society is eligible for nomination and election to any office of the Society provided they have been a member in good standing for one year prior to running for office. Professional members are eligible for all offices except for President and Vice-President. All newly elected Officers shall take office at the first July meeting.
- Section 2) Nominations and Elections: Nominations shall be made by a Nominating Committee appointed by the President and approved by the Executive Council. At least 2 candidates shall be presented for each Office open for election, or, the Nominating Committee may, with the approval of the Executive Council, present a single name for any Office. Nominations shall be entertained from the floor during the new business portion of the May general meeting annually. Elections will be at the June meeting, annually. A simple majority is required for a valid election.
- Section 3) Executive Council: The Executive Council shall manage the affairs of the Society in the best interest of the Society and in accordance with its purpose as expressed in the By-laws and the Statutes of the State of Missouri.
There shall be a meeting of the Executive Council prior to each regular meeting of the Society.

Any member of the Executive Council can convoke a special meeting whenever it is felt the affairs of the Society require it.

Article 12: Meetings:

The Society shall have one (1) regular meeting each month. The order of business at all meetings and the program of any meeting shall be determined by the Executive Council, or an officer or committee designated by the Executive Council. Roberts Rules of Order Revised shall be used in conducting the meetings. The President or the Executive Council shall have the authority to invoke these rules whenever necessary, and to appoint a Sergeant at Arms to enforce them.

Article 13: Financial:

The Treasurer shall deposit all Society funds in a federally insured organization in the Society's name. The Treasurer may only issue checks for Society expenses. The Treasurer will submit a financial report once a year. A yearly audit of the Society's account will be made (subject to State and Federal laws) by an Auditing Committee appointed by the Executive Council at the last meeting of the fiscal year. All bills are paid by check. The Treasurer shall keep an accurate account of all funds of the Society. All expenditures shall be approved by the Executive Council. All expenditures so approved must be submitted to the Treasurer within 60 days of incurrence of said expenditure. Checks written on Missouri Aquarium Society account may be signed by the President or Treasurer.

Article 14: Inurement and Propaganda:

No part of the net earnings of the corporation shall inure to the benefit of, or be distributable to its members, trustees, officers, or other private persons, except that the corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes described in section 501(c)(3). No substantial part of the activities of the corporation shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and the corporation shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of or in opposition to any candidate for public office. Notwithstanding any other provision of these



articles, the corporation shall not carry on any other activities not permitted to be carried on (a) by a corporation exempt from federal income tax under section 501(c)(3) of the Internal Revenue Code, or the corresponding section of any future federal tax code, or (b) by a corporation, contributions to which are deductible under section 170(c)(2) of the Internal Revenue Code, or the corresponding section of any future federal tax code.

Article 15: Committees:

Each committee authorized by the Executive Council shall be considered automatically discharged at the close of the term (June meeting), unless the Council or membership take action to continue the committee.

Nominating Committee: Refer to Article 11, Section 2 and shall consist of the Chairman and other appointed members as seen fit. They shall submit a roster of candidates at the Executive Council meeting prior to the May general meeting.

Show Committee: Refer to Article 5 and shall consist of other appointed members as the Show Chairman sees fit. They shall be responsible to conduct the Annual Show or Shows and the Super Bowl Show or Shows in the best interest of the Society.

Article 16: Registered Agent and Historian:

The President is to be the Registered Agent of the corporation, and is responsible for timely execution of all governmental filings regarding corporate status of the organization. The Historian shall be appointed by the President and shall be responsible for maintaining an Archive of all Society activities, as directed by the Executive Council. All officers will turn in a complete record of their tenure to the Historian by the second meeting of each year.

Article 17: Duties of Officers:

The President will preside at all meetings according to the By-laws. The President has the authority to fill any vacated office to complete the unexpired term.

The Vice-President will preside at all meetings whenever the President is absent, or in the event of the President's inability or refusal to act. The Vice-President will also be the Program Chairman and head the Nominating Committee.

The Secretary shall keep accurate minutes of all meetings, regular or special, and submit same at any meetings whenever the President so requests.

The Treasurer's duties are outlined in Article 13. Also, the Treasurer will notify the Membership Secretary of all additions to the membership, and will notify all members who are delinquent in the payment of donations. The Treasurer shall in general perform all duties incident to the office of Treasurer and such other duties as may be assigned by the President or Executive Council.

Article 18: Corresponding Secretary and Membership Secretary:

The Corresponding Secretary shall be appointed by the President solely for the purpose of conducting such business assigned by the President and Executive Council. The Membership shall keep an accurate and current roster of all classes of members, and intervals of every three months compare records with those of the Treasurer.

Article 19: The Editor:

The Editor of the publication of the Society shall be appointed by the Executive Council and must mail announcements of the meetings, dates and places as directed by the Executive Council. The Editor shall be responsible for the publication and all duties connected with said publication as is in the best interest of the Society

Article 20: Librarian:

The Librarian shall keep the Society's books and magazines in good order. Any funds derived from the Library's use will be used to better the Society. The Librarian shall give a quarterly financial report to the Treasurer. The Treasurer will keep an accurate account of the Library funds.

Article 21: Rules of Order:

Roberts Rules of Order Revised shall be the authority in all transactions of the Society not provided by these By-laws and/or articles of incorporation. (Refer to Article 12)

Article 22: Motions from the Floor:

Motions made and seconded from the floor at a general meeting concerning the regular business of the Society shall be first approved by the Executive Council. If approved by the Executive Council, the motion will be brought before the next regular meeting for discussion and voting by the regular membership.

Article 23: Voting:

All voting concerning changes or additions to the By-laws and Elections shall be by secret ballot.

Article 24: By-laws:

These revised by-laws of April 8, 2016 supersede all previous by-laws and amendments. Any additions or amendments to these By-laws shall be distributed to all members.



THE DARTER
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