

modern AQUARIUM



June 2018
volume XXV
number 4

Greater City Aquarium Society - New York

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Series III Vol. XXV, No. 4 June, 2018

ON THE COVER

When you read Joe Ferdenzi's article on breeding *Synodontis lucipinnis* in this issue (page 11), you will be reminded that Joe has been active in this hobby since the 1960s. This month's cover is a colored pencil drawing of a ram (*Microgeophagus ramirezi*), that Joe made in the late '60s when he was a teen-ager.

Drawing by Joseph Ferdenzi

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In This Issue

From the Editor.....	2
G.C.A.S. 2018 Program Schedule.....	3
President's Message.....	4
May's Caption Contest Winner.....	5
Our Generous Sponsors and Advertisers.....	6
Cartoon Caption Contest.....	7
Fishy Friends' Photos.....	8
Observations.....	9
by Susan Priest	
<i>Synodontis lucipinnis</i>	11
Breeding a Lake Tanganyika Catfish.....	
by Joseph Ferdenzi	
Where's the Fish?.....	15
Charleston, Mud Minnows, and the Un-Eclipse.....	
by Stephen Sica	
Moss In Aquaria.....	19
by Michael Buchma	
The Insane Fishkeeper.....	21
by William Amely	
Mighty Rivers.....	23
A Review.....	
by Dan Radebaugh	
Pictures From Our Last Meeting.....	24
Photos by Joe Gurrado	
G.C.A.S. Member Discounts.....	26
G.C.A.S. Classifieds.....	27
G.C.A.S. Happenings.....	28
The Undergravel Reporter.....	29
Remote Floaters	
Fin Fun (Puzzle Page).....	30
Ask The Experts	

From the Editor

by Dan Radebaugh

As I've mentioned before in this column, there is an active article exchange program among tropical fish societies. For all, or nearly all, of the active societies, all we Editors can run articles from one another's publications, so long as there are no unusual copyright restrictions, providing that we are informed of such use, and that we give credit to the donor pub.

It seems to me that this is a good way for all of us to get some content on subjects that our members may enjoy reading about, and it lets all of us Editors know what's going on in other publications. You may have noticed that for the past few years I've been running an exchange article in each issue. For the special 'Fish Behavior' issue a couple of years ago I used more than one.

When I learn that a particular article from **Modern Aquarium** has been used in another publication, I try to email our member/author to let him or her know. However, this month I thought it would be fun to let *all* of our members know how **Modern Aquarium** articles are showing up in other clubs' publications.



Of course one of the downsides to this digital pick-up of articles is that unless I receive a copy of the publication that has reprinted our article, I have no way of knowing that it was used.

So listed below are articles from **Modern Aquarium** that have appeared in other publications (that I know about) over the past several years. My thanks to our authors, and to the clubs that have let me know that they've used our articles in their journals.

Author	Title	Society	Publication	Issue
Berman, Steve	<i>Gymnogeophagus balzanii</i>	Victoria Cichlid Society	iCichlid	May-15
Birnbaum, Jules	Divide and Conquer!	Jersey Shore Aquarium Society	The Shoreline	Sep-15
Bollbach, Jeff	Rules Are Made To Be Broken	NEC	NEC Bulletin**	Apr-17
Chang, Tommy	MTS: Is There a Cure?	Bucks County Aquarium Society	The Bucketette	Sep-15
Ferdenzi, Joseph	Endler's Livebearer	Bucks County Aquarium Society	The Bucketette	Dec-13
Ferdenzi, Joseph	The Easy Way to Breed Killifish	Eastern Iowa Aquarium Association	Fin Flap	Apr-15
Ferdenzi, Joseph	The Easy Way to Breed Killifish	NEC	NEC Bulletin***	Aug-17
Hinshaw, Steven	The Jar That Stands the Test of Time	NEC	NEC Bulletin*	Dec-16
Oshins, Elliot	To Be, Or Not to be...	Motor City Aquarium Society	Tropiquarium	May-18
Priest, Alexander A.	The Ultimate Nano Fish	Bucks County Aquarium Society	The Bucketette	Feb-14
Priest, Alexander A.	The Most Ornate African	Bucks County Aquarium Society	The Bucketette	Aug-16
Priest, Alexander A.	Breeding <i>Betta Splendens</i>	Bucks County Aquarium Society	The Bucketette	Mar-16
Priest, Alexander A.	The Fish of Many Morphs	NEC	NEC Bulletin**	Jun-16
Radebaugh, Dan	Going the Distance with <i>Paratheraps synspilus</i>	Bermuda Fry-Angle Society	Fish Tales	Apr-11
Radebaugh, Dan	<i>Paratilapia</i> sp 'fony'	American Cichlid Association	B.B. 269 [#]	Apr-12
Ramroop, Lauren	Angel and Betta	NEC	NEC Bulletin***	Aug-16
Sica, Stephen	In the Realm of the Moray Eel	Bucks County Aquarium Society	The Bucketette	Oct-14
Sica, Stephen	I Still Like Duckweed!	Southwestern Michigan Aquarium Society	SWAM	Mar/Apr-17
Sica, Stephen	Easy Rider and the Foureye Butterfly Fish	NEC	NEC Bulletin ⁺	Oct-17

*NEC Articles Competition Winner Entry Reprint 2014 Open Class – 1st Place Winner

**NEC Articles Competition Winner Entry Reprint 2014 Open Class – 2nd Place Winner

***NEC Articles Competition Winner Entry Reprint 2014 Breeding – 3rd Place Winner

[†]NEC Articles Competition Winner Entry Reprint 2015 Open Class – 2nd Place Winner

^{††}NEC Articles Competition Winner Entry Reprint 2015 Open Class - 3rd Place Winner

^{†††}NEC Articles Competition Winner Entry Reprint 2015 Junior Class - 3rd Place Winner

[#]Appeared first in *Buntbarsche Bulletin* Number 269, April 2012 -- Reprinted in *Modern Aquarium* in November, 2013





GCAS Programs

2018

It is our great fortune to have another admirable cast of speakers who have so graciously accepted our invitation to join us throughout the coming season, bringing us their extensive knowledge and experiences. You certainly won't wish to miss a moment of our prominent guests, not to mention the friends, fish, warmth, and camaraderie that accompany each meeting.

March 7	Tom Keegan <i>Fish Bio 101</i>
April 4	Judith Weinberg <i>Starry, Starry Night Cichlids: An inter-species love affair</i>
May 2	Artie Platt <i>Fishroom Tools</i>
June 6	Ask The Experts <i>Joseph Ferdenzi, Moderator</i>
July 11	Salvatore Silvestri <i>Apistogramma and other dwarf cichlids</i>
August 1	A Night at the Auction
September 5	Kevin Kelly <i>Lighting</i>
October 3	Gary Hater <i>Goldfish</i>
November 7	Rusty Wessel <i>TBA</i>
December 5	Holiday Party!

Articles submitted for consideration in **Modern Aquarium** (ISSN 2150-0940) must be received no later than the 10th day of the month prior to the month of publication. Please email submissions to gcas@earthlink.net, or fax to (877) 299-0522. Copyright 2018 by the Greater City Aquarium Society Inc., a not-for-profit New York State corporation. All rights reserved. Not-for-profit aquarium societies are hereby granted permission to reproduce articles and illustrations from this publication, **unless the article indicates that the copyrights have been retained by the author**, and provided reprints indicate source, and that two copies of the publication are sent to the Exchange Editor of this magazine. For online-only publications, copies may be sent via email to gcas@earthlink.net. Any other reproduction or commercial use of the material in this publication is prohibited without prior express written permission.

The Greater City Aquarium Society meets every month, except January and February. Members receive notice of meetings in the mail or by email. For more information, contact: Dan Radebaugh (718) 458-8437 or email gcas@earthlink.net. Find out more, see previous issues, or leave us a message at our Internet Home Page: <http://www.greatercity.net>, <http://www.greatercity.org>, or <http://www.greatercity.com>.

President's Message

by Horst Gerber

My ears pricked up when Artie Platt delivered his interesting and informative program on useful household items for your aquarium. There are probably even more useful items around the house than Artie came up with. Many of you are probably now (to the dismay of your spouses) raiding your kitchen cabinets to collect useful items for your fishrooms. “Honey, have you seen my gold-plated coffee filter, or my glass baking pan?”

Artie delivered his program with a powerful voice (right up there with Joe’s, if that is possible). Not everyone’s voice (like mine, for example) carries all the way to the back of the room. We are looking at dependable ways to help out those who aren’t used to projecting. We’ve had a sound system for many years, but feedback has always been a problem. If all our speakers could project like Artie we’d only need a sound system for me.

On my late arrival at the meeting (bridge problem in the Bronx) I had to use my new noise reduction device to restore law and order. The ringing of the old subway bell startled our members and reduced background noise to livable levels. I felt that the air horn had outlived its usefulness, as our members had gotten used to it, so I tried something new. We’ll see how long that is useful. While I was stuck in traffic Joe (Ferdenzi) took over the throne and bridged the gap. He just can’t get being Prez out of his system. Seriously, I would like to express my deep appreciation to Joe for always being there when we need him!

If you were observant you noticed the emperor’s new clothing (and I don’t mean I showed up in the buff). A very good friend couldn’t resist temptation, and had the shirt made for me. Do you remember what it said (answer at the bottom of this page)? If you don’t, it’s OK – neither do I. I liked the T-shirt so much that, after wearing it for ten days straight, I had it dry-cleaned instead of washed to preserve it longer!

The meeting was very well attended. It must be me. Or perhaps our auction, which always amazes me with the amount of fish, plants, and other related items brought in by our members. A few members (including me and our speaker Artie) arrived late due to a snafu on the Hutchinson River drawbridge. After opening it to let a boat through, they couldn’t get it back down. I understand that the traffic was backed up all the way to New Rochelle. The normal half-hour drive became a two-hour tour (cue the **Gilligan’s Island** theme).

For the second meeting in a row we had some equipment problems. Many thanks to our computer guru Jason Kerner for coming through once again. It might be time to look at a new projector system, as this one seems to be showing its age.

Until next month...

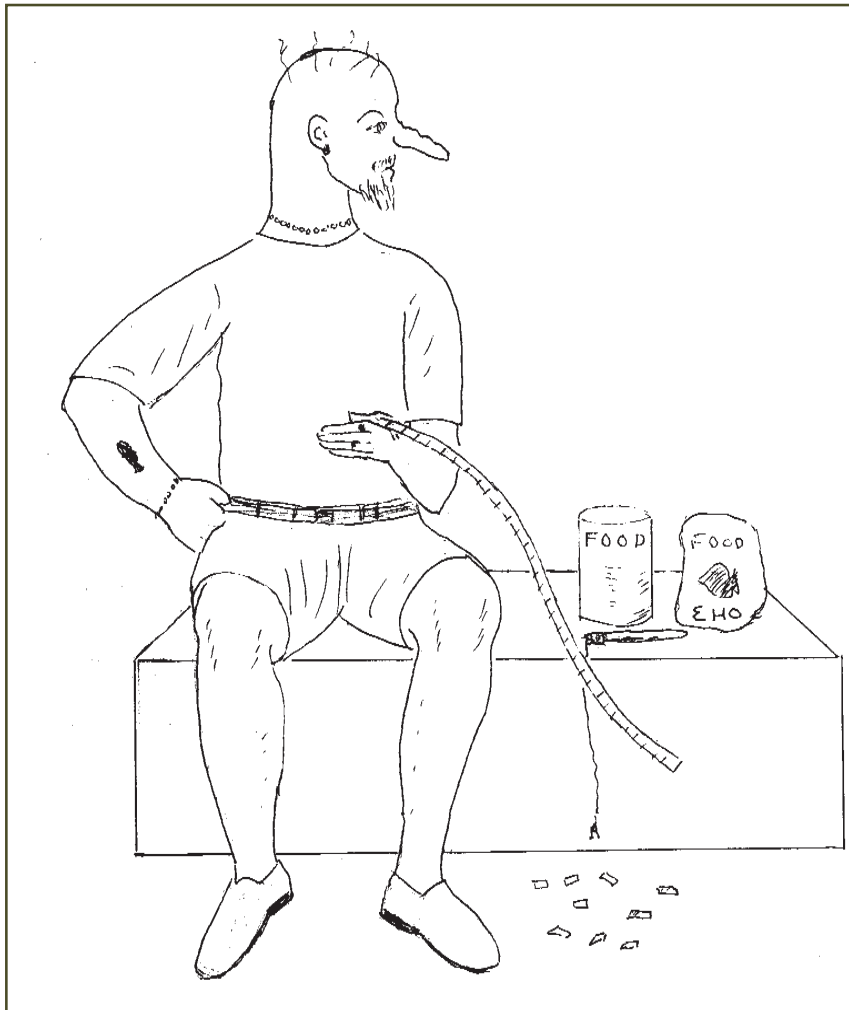


Horst

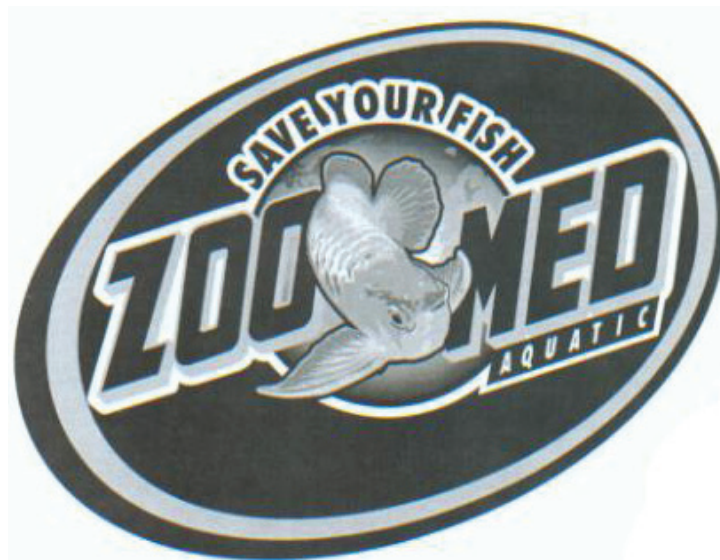
T-Shirt Caption: **It Do Gerber Let, and Keep Calm**



May's Caption Winner: Bill Amely



Nice, but what I really wanted was that Fluval filter!





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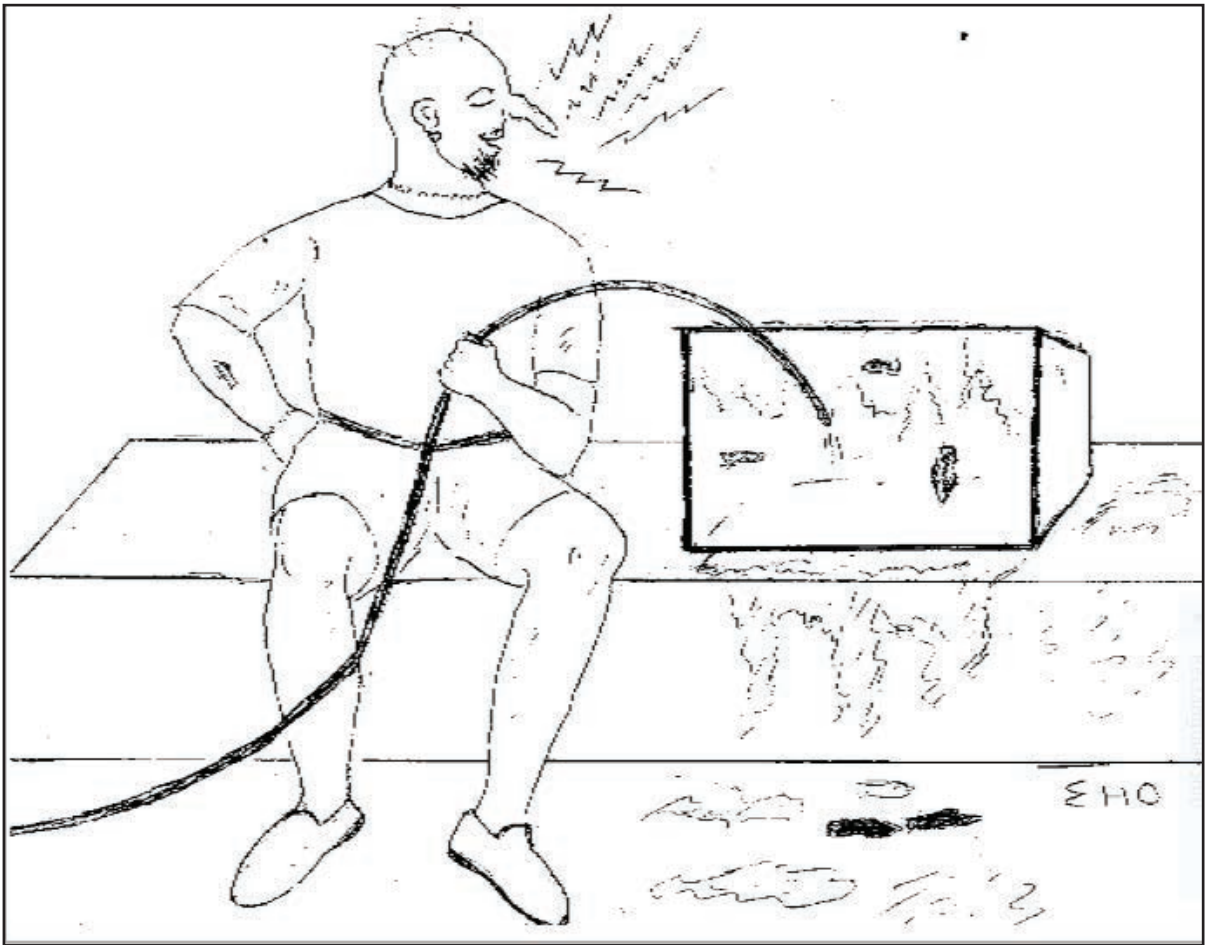
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The Modern Aquarium Cartoon Caption Contest

Modern Aquarium has featured cartoons before. This time though, you, the members of Greater City get to choose the caption! Just think of a good caption, then mail, email, or phone the Editor with your caption (phone: 347-866-1107, fax: 877-299-0522, email: gcas@earthlink.net. Your caption needs to reach the Editor by the third Wednesday of this month. We'll also hand out copies of this page at the meeting, which you can turn in to Marsha before leaving. Winning captions will earn ten points in our Author Awards program, qualifying you for participation in our special "Authors Only" raffle at our Holiday Party and Banquet. Put on your thinking caps!



Your Caption:

Your Name:

Fishy Friends' Photos

by Greater City Aquarium Society Fishy Friends

Below are photo submissions to our "Fishy Friends" Facebook group. I've left the subjects unnamed, but not the photographer. If you see a shot you like, and want more info, ask the photographer about it! I'm sure he or she will be delighted to tell you!



Ron Webb



Joe Gurrado



Joe Gurrado



Ruben Lugo



Crystal Mattocks



OBSERVATIONS

Article and photo by Susan Priest

Ever since 1990 I have been hanging around the aquarium hobby. I know, compared to some of you I am still an amateur. During this tenure I have read countless books and magazines, attended a similarly countless number of programs on a wide variety of subjects, and have engaged in more conversations with other hobbyists than my memory can retrieve. I have even dabbled a bit with internet sources (not my strong suit). I have amassed a volume of knowledge which cannot be weighed or measured. In addition to all of that, I have also made some observations of my own; things which I have learned from experience with my own aquariums, things which I have not come across through other sources. The following observations are personal to my aquariums, but a few of them might apply to some of yours as well.



PLANTS

A while back I wrote about a tale of two tanks. They have virtually everything in common with each other, with a couple of exceptions. One has live floating plants, and the other has plastic floating plants. The one with the live plants always has more debris on the floor than the other one.

Hair algae does not disturb the fishes in any way. It is only us aquarists that can't stand the sight of it!

If there is a large volume of plants in a tank, they will need a long photo-period. If you cut down on the number or size of the plants, you will need to cut down on the light as well, or you will have blooming algae.

LED lights do not generate any heat, and cost less to use than fluorescents. However, I can not observe that they offer any particular benefits to my plants. Even though I run the LED lights for more hours per day, I think that the plants were growing better when I was using fluorescent lights.

FEEDING

Overfeeding your fishes will not make them grow any faster or larger. You will just have to clean the tank more often.

If I am interrupted after I start feeding my fishes, by the time I get back to it I can't always remember which ones have already been fed, so I try as much as possible to accomplish the task all at once.

A variety of pelleted foods can be easily dispensed by using a pepper grinder.

Portion out the right amount of food into the palm of your hand, or into the lid of the container, before you feed it out. (If the food is packaged in a pouch, then transfer it to one with a lid when you open it.) Never hold the container over the tank and shake out what you think is the correct amount, because it never will be. It will always be too much or too little.

WATER CHANGING

If your aquarium looks like it needs to be topped up, what it really needs is a water change.

If you see debris of any kind floating around in your aquarium, it is time to do a water change.

If your box filter or sponge filter is sending up one or two air bubbles every 30 seconds, then it is time to do a filter cleaning (as well as a water change).

If you don't happen to be taking a bath, a nap, or watching Game of Thrones, then you may as well be doing a water change. You can't do it too often, and your fishes will always appreciate it!

MISCELLANEOUS

Make sure that the floors of your tanks are not so cluttered with "whatever" that you won't be able to notice a dead fish down there.

At least in my community aquarium, tetras and danios live much longer than platys and swordtails.

Tanks without gravel (or other substrates) are easier to keep clean than those with a substrate.

There are two plecos in my 90 gallon community, as well as two "logs." The plecos can always be seen in, on or near the glazed ceramic log., but I have never seen them in, on or near the log made of resin (whatever that is!).

If, under whatever the circumstances might be, you find yourself with a previously occupied aquarium which no longer has any fishes in it, you will want to introduce what I call a "place holder." A place holder is a fish (or fishes) which serve the purpose of preserving the nitrogen cycle until such time as you choose new permanent residents. Without a source of ammonia (such as fish urine) the nitrogen cycle will collapse, and you will be starting over as if it was a new tank. A place holder will keep the tank in full readiness for its next occupants.

IN CONCLUSION

Perhaps these observations only have relevance within my own aquariums, and perhaps you have a similarly unique set of methods and techniques (i.e., observations) that work well for you. But, just perhaps, all of our observations might overlap at least a little to the benefit of all of our fishes. That is my long-winded way of saying that we can all learn from each other. What a great hobby we share!

*The three spot gourami in the accompanying photo is a place holder fish. It is keeping the nitrogen cycle alive in an aquarium which was home to two moonlight gouramis for six years, both of which recently died within two weeks of each other.



Breeding a Lake Tanganyika Catfish: *Synodontis lucipinnis*

by Joseph Ferdenzi

When I started in the hobby in the 1960s, catfish were generally just thought of as fish used to clean up the food not eaten by your other fish. Few thought of keeping them in a tank of their own as “the stars of the show.” Granted, back then there were hardly as many catfish species known to the hobby as there are now, and even fewer could be described as colorful or strikingly patterned. But all of that has changed, and now catfish can stand on their own as stars in the aquarium world.

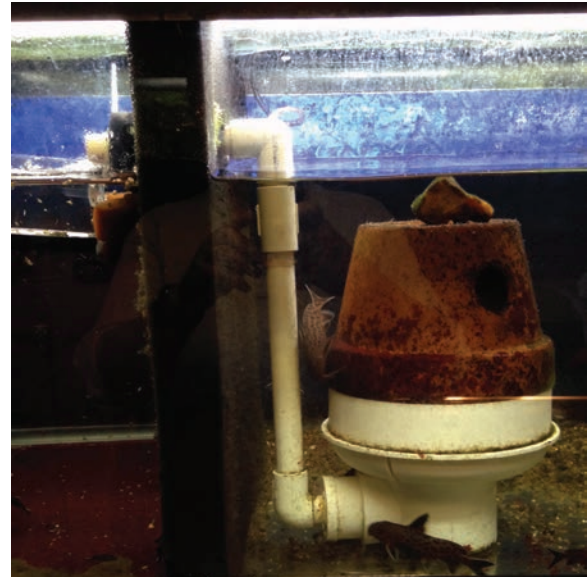
Over the years, I have kept many kinds of catfish. One of my favorite groups of catfish is the African genus *Synodontis*. In the 1960s, just about the only *Synodontis* you regularly saw in local pet shops was the so-called ‘upside-down catfish,’ *Synodontis nigriventris*. It was called that because of its habit of swimming with its dorsal side facing the bottom—rather unusual. This fish was not particularly striking otherwise; its color being a sort of mottled brown.

However, over time the availability of *Synodontis* species began to change, and we were introduced to many more during the 1980s and thereafter. Mind you, while most of these catfish were known to the hobby before then, they had not been commonly available to the average hobbyist until then.

Along with the African Rift Lake cichlid craze that occurred in the 1980s, we became aware of the *Synodontis* species that inhabited those lakes. Among them was a small species called *petricola*. This fish has a slender body with multiple black spots on light brown, and dark fins edged with a white strip. Endemic to Lake Tanganyika, it is a very pretty fish, and adapts well to aquariums. In 2016, after seeing the breeding setup of fellow hobbyist and friend Dave Banks of Vermont, I decided to try my hand at breeding *S. petricola*.

At Dave’s house I had seen what I thought was an ingenious way to breed these fish. This catfish is an egg scatterer, so unless you somehow protect the eggs, you run the risk that they will be eaten by the adults. Before seeing Dave’s setup, I had heard of using marbles placed in a container as a medium for receiving and hiding the eggs. I was not enthralled by this approach, because I felt that it required me to notice the eggs, and then remove the container before the eggs hatched. Otherwise, I assumed, the fry would swim out and be eaten by the adults. When I saw Dave’s setup however, this problem had been solved by a “contraption” where the eggs were being laid.

Let me describe how I went about constructing my own breeding “contraption.” The essential parts of this device consist of some PVC plumbing parts, a clay flowerpot, and some airline tubing. The photo below illustrates what the finished product looks like, and I will guide you through its construction.



A view of the tank showing the two compartments divided by a sponge wall. On the right is the chamber where the breeding apparatus is situated. The airlift spout is seen protruding through the sponge wall into the chamber where the fry emerge from the spout.

Start with a 6-inch PVC floor drain, which can be purchased in many places (I bought mine at Home Depot). It is not expensive. The floor drain has a grate, held in place by a stainless steel screw. This grate plays a key role in the breeding process, because it allows the eggs to fall to the bottom of the drain, where they are not accessible by the adults. The bottom of the drain of course has an opening for piping to carry away water. For this opening you will need to purchase a PVC reducer so you can attach half-inch diameter PVC pipes. Then, with a series of half-inch elbows, you create your riser to the height you will need for the barrier that will separate your fry compartment from your adult compartment (more on this later). Drill a hole at the base of your riser that is just large enough to accommodate your airline tubing, which is then shoved into the hole. None of these parts needs to be glued; friction and pressure will hold them in place for our purposes.

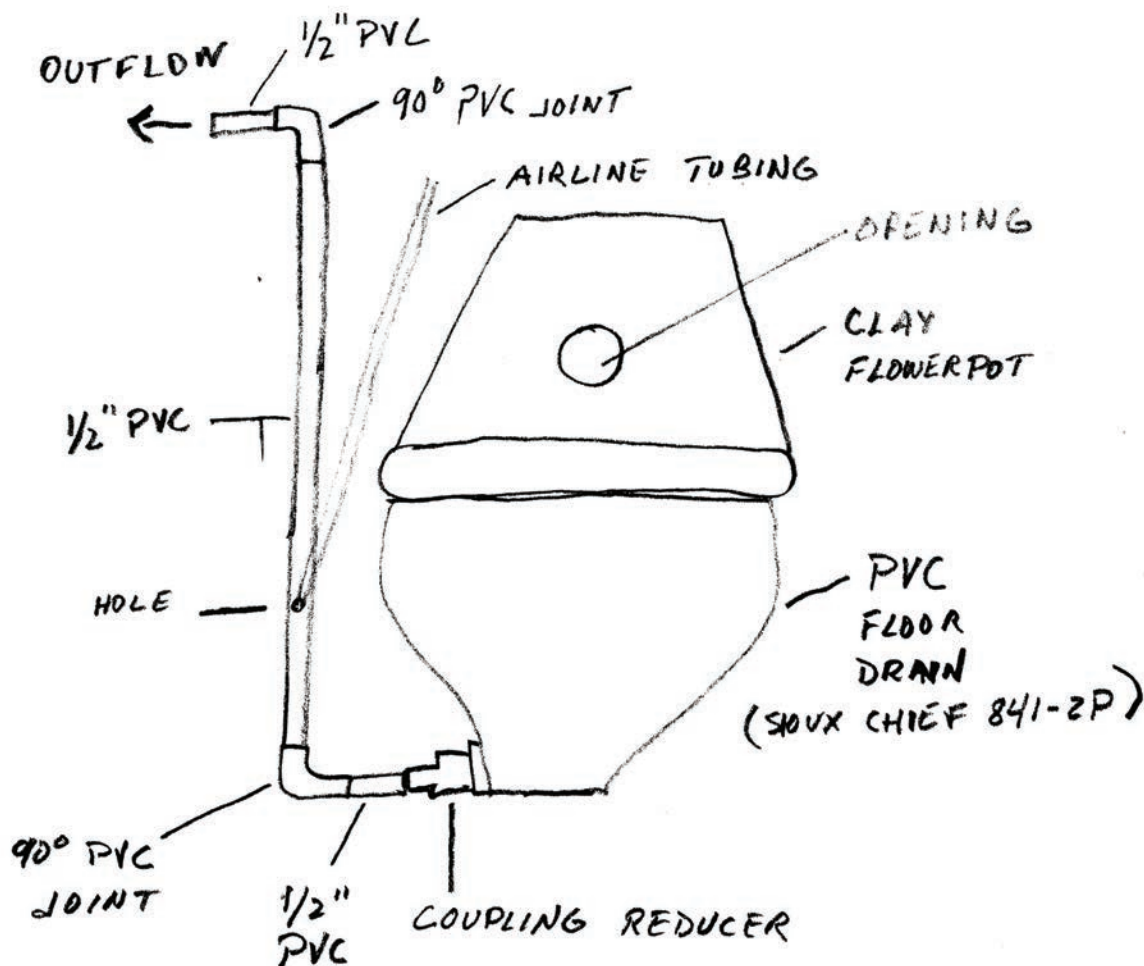


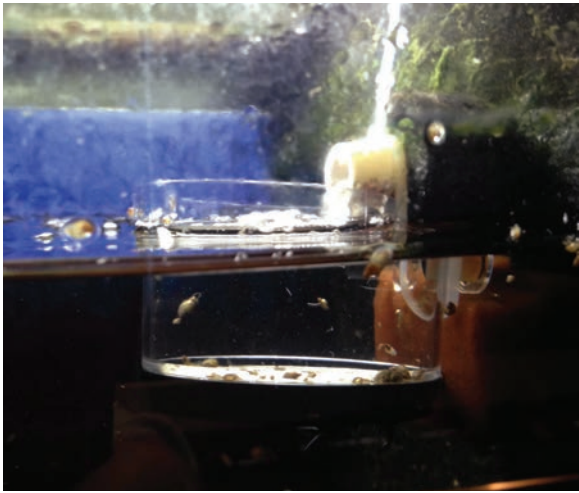
A close-up of the breeding apparatus showing the hole in the clay flowerpot through which the adults enter. The adults spawn over the floor drain situated underneath the pot.

After you have completed the PVC assembly, place your clay flowerpot on top of the drain, upside-down. The flowerpot will need a one-inch diameter hole for the adults to enter. Usually the supplied drainage hole at the bottom of a flowerpot is too small for our purposes. This hole can be enlarged with a circular saw drill or, as I did, you can drill a hole in the *side* of the flowerpot. Whichever method you choose, the key to successful drilling is to soak the flowerpot in a bucket or water for a day or two prior to drilling. This makes it *much* easier to drill the hole. For me it worked perfectly, and trust me, I'm no handyman.

I divided my tank into two compartments by using a one-inch thick piece of foam such as is used for aquarium filtration, and sold by companies such as Swiss Tropicals. The foam can be easily cut using a kitchen knife to fit the dimensions of your tank. I used scissors to punch a hole where I intended to insert the PVC tubing, and then simply pushed the pipe through it. Any measurement mistakes are easily rectified; the foam closes up the old hole, and you can adjust your PVC pipes because you haven't glued them together.

Once you have attached the airline tubing to your air source, you should see a steady stream of water coming out of your end spout. This stream of water





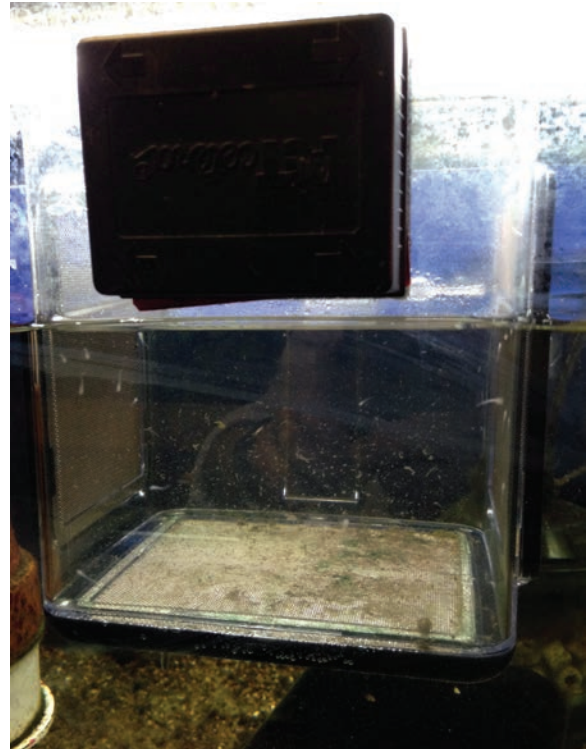
When the fry chamber is occupied by half-inch or larger juveniles, a brine shrimp sieve is attached to the front of the spout with a plastic cable tie. Newly hatched fry are thus prevented from entering the chamber where they would have to compete with the larger juveniles. From there they are removed using a kitchen baster to the separating box.

is what carries your eggs and fry to the safety of their compartment, away from the adults.

The beauty of this system is that you do not have to worry about finding and removing eggs before they hatch—the water stream does it automatically. I like to keep the water stream strong. Be patient, and one day you will be rewarded by the sight of fry (they are very small!) swimming on their side of the tank.

Having set up my breeding tank, I was now ready to introduce my breeders. Sometime before, I had purchased a group of six near-adult *petricola* from Franklin Pet Center in nearby Franklin Square. When I told Manny, the owner, that I intended to try to breed them, he gave me a special price on the fish. I had been growing them out in a 20 gallon tank while I got the 40 gallon breeder tank ready.

When I showed the fish to my friend and fellow GCAS member Mark Soberman, a nationally known catfish expert, he explained to me that these fish, although sold in the trade as *petricola*, were actually likely to be a closely related species known as *lucipinnis*. Further research disclosed that *lucipinnis* are often referred to as “dwarf *petricola*.” Indeed, full-grown adults rarely exceed four inches in length.



The separating box, like the brine shrimp sieve, has very fine mesh sides that prevent small fry from escaping. The box comes with suction cups so that it can be attached to the glass, but I prefer to use strong cleaning magnets, because suction cups can dislodge and empty the contents of the box. The fry are kept in this box until they are large enough to join their siblings in the main chamber -- not out of fear of predation, but so they can more effectively compete for food. Although the fry are small, they are large enough to consume newly-hatched brine shrimp. They can also be fed pellets and tablets, as those foods dissolve, and the fry can graze on the minute particles. When the juveniles get to be about a half-inch in size, they can be fed with whole tubifex worms or chopped blackworms.

Inasmuch as *lucipinnis* originally hails from Lake Tanganyika, their water should be alkaline (having a pH value above 7.0). To this end I keep crushed coral in their filter boxes and perform regular water changes. I keep the temperature between 74 and 76 degrees Fahrenheit. These fish are not fussy eaters. I keep them on a diet of live blackworms, live tubifex worms, shrimp pellets, and assorted sinking tablets. As everyone should know, good nutrition and good water quality are essential ingredients for successful breeding.

While sexing *lucipinnis* is difficult, if, like me, you start with a group of six or more, you will almost certainly have at least one pair. I provide them with some ceramic caves as hiding spots, but otherwise their tank contains no gravel or plants, and the only

dark hiding place is the flowerpot that serves as the entrance to where they like to spawn. Given the right treatment, these fish will give you abundant fry.

To reciprocate his kindness in providing me with the adults, I gave Manny six two-inch juveniles that I raised from one of my first spawns. I have since donated fry to several club auctions. As with all breeding success, it feels very rewarding. For me personally, it is especially so, because as a kid who started in this hobby in the sixties, I never dreamt that I would one day be able to spawn a catfish, much less one so exotic as *Synodontis lucipinnis*.



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Where's The Fish?

or

Charleston, Mud Minnows, And The Un-Eclipse

Story and Photos by Stephen Sica



When the eclipse began, I noticed a string of huge sunspots. Did you know that a large spot can hold several earth-sized planets?

Ever since the development of rockets and satellites during the 1950s, the era of my childhood, I have had an interest in astronomy and all things space. While I was in grammar school, my father gave me a small telescope one Christmas, and I became an amateur astronomer. I knew all the planets, moons, constellations, comets, and much more. Unfortunately, today I have trouble remembering even the names of my friends—and by the way, is Pluto still a planet or did he become a cartoon movie star?

What does this have to do with fish? I'm sorry to say, not too much. But last spring I told Donna that I would like to travel south to observe the total solar eclipse of August 21, 2017. I mentioned it to our friend Jean-Michel (also known as J-M), who shares similar interests with me. He said that he wanted to see the eclipse too, so we made plans to fly to Charleston, South Carolina on a Sunday in August with our wives and Cordelia for a few days, to photograph the eclipse and see some sights. Donna and I had been to Charleston many years ago, but this was the first visit for Cordelia and our friends.

Monday was eclipse day, so we arose early in the morning to prepare our camera equipment. J-M and I had our tripods and cameras ready to pack in the car. Being quite computer literate, J-M had prepared a computer program to aim his camera from a specific location. We had originally planned to drive to Santee, South Carolina, a town with many state parks and lakes. It's about a one hour drive along I-95, the north-south corridor for driving to and from Florida. Shortly before we left home, J-M decided that Santee would be crammed with eclipse chasers, so he found a small park about five miles north of our hotel in Charleston proper. Since he was doing all of the driving, I readily agreed. He rewrote his computer program; it could not be altered once we left New York.

On the big day, while riding our hotel elevator down to pack up the car, we met a fellow eclipse chaser who said that the weather in North Charleston was supposed to deteriorate in the afternoon. He had decided to head north to a new location. Cindy, J-M's wife, said that we should do likewise. However, being quite stubborn (as well as French) J-M stayed

committed to his local park plan. With strong misgivings on my part, we left for J-M's park. I anxiously set up my camera next to our parked car, while my comrades hung out. We walked to a local supermarket we spotted from the vantage point of our car to purchase lunch supplies, while awaiting the 1 PM start of the eclipse. We settled at a picnic table about fifty yards from our car. A van stopped nearby and people began to set up their photography equipment. After lunch we learned that a family of four had traveled from Spain and parked next to us with their cameras. We engaged in conversation with them, and learned that they had seen two prior eclipses and decided on Charleston because it is near the ocean. They predicted that its seacoast weather should blow away any clouds.

At first contact, we began photographing the eclipse's early phases. Many years ago I enjoyed observing and recording, on thirty-five millimeter slide film, the ebb and flow of sunspots with my five inch telescope. On eclipse day, there were some nice sunspot groups, so I photographed a few sunspot close-ups while ignoring the dwindling sun itself.

Minutes before totality, a lightning storm erupted to our north, and the sky rapidly blackened. I composed a few expletives in my mind and psychically

hurled them towards J-M. I mumbled to myself all the way back to our hotel. Donna kept giving me a stern look but I just couldn't help myself.

The next day Cindy and J-M took a harbor cruise to visit Fort Sumter while we took a separate harbor cruise on a three-masted schooner. We met three couples from Richmond, Virginia, and began talking about the eclipse to one man in particular. He whipped out an inexpensive point and shoot digital camera and showed us photos he had taken from a rooftop restaurant in downtown Charleston. We had been in that precise location the afternoon before the eclipse! With great annoyance, I petted sea dog Cordelia and gazed into the harbor waters looking for fish for a potential **Modern Aquarium** article. Like most harbors though, the water was too murky to see anything.

The next day we were off sightseeing. We visited a tea plantation owned by Bigelow. Oddly, the harvested tea leaves were trucked to Connecticut to be processed into tea and shipped back to Charleston to be sold locally at the plantation gift shop.

Afterward, we toured another plantation, a former rice growing estate called The Magnolia. A tram took visitors on a motor tour. There were many fields where rice had been grown, and they were



Donna wants Cordelia to try on her not-so-custom eclipse glasses before she allows her look up at the bright sun.



Cindy helps Jean-Michel set up his camera. In the foreground, my camera is ready to go.



As the eclipse progressed, so did the overcast, and the sky began to cloud up.



Solar eclipse totality in North Charleston, South Carolina. Darkness arrived, along with clouds, at approximately 2 PM. A thunderstorm developed to the northeast and headed our way. We disassembled our cameras and tripods and drove off to our hotel. I was in a foul mood.



The day after the eclipse, I photographed my family while scanning the waters of Charleston Harbor. I was searching for sealife for a potential article, but we were sailing too fast, the water was too deep, and the underwater visibility was murky.



J-M has his camera ready during a lazy cruise through the flooded rice fields of the former Magnolia Plantation. Some parts of the fields had a river-like appearance.



We toured a flooded rice farm in the foreground. A local river, the Ashley, runs a few yards beyond, separated by a narrow strip of land. The Ashley is a blackwater/tidal river that arose from inland swamps. Downstream, it merges with the Cooper River before emptying into Charleston Harbor and eventually the Atlantic Ocean. I wonder what kind of fish live in the Ashley? With the local alligators and no obvious way to get to the river, I'm not anxious to find out.



Another view of the Ashley River



When I couldn't find any fish in the flooded fields, Donna suggested that I photograph other wildlife, such as this egret or crane, or whatever it is. I do know that it is not a fish!



Alligators like this one kept me from snooping around the local freshwater ponds, lakes, and rivers in search of fish.

surrounded by irrigation ponds. One was a fairly large lake. The main rice fields had been flooded to become a river-like habitat for fish and birds. It also was populated by small alligators. After the tram, there was a flat bottom boat tour through the flooded fields where we saw a variety of wildlife. I assumed that the water was shallow, because small fish kept leaping out of the water as the boat motored along. I asked the driver/tour guide what kind of fish these

were and he replied that they were mud minnows. I tried to photograph them, again thinking that I might be able to write something for **Modern Aquarium**, but I could not time the leaping fish.

The alleged mud minnows were jumping in front of the boat, off the port side where I stationed myself, and off the starboard side. Fish were jumping all about us! The boat easily held twenty to thirty people. but there were only six of us, plus one dog, so I was able

to race around attempting to photograph all these jumping minnows. They were all over the place! I even took photos when none were jumping on the hunch that a fish would leap out of the water just as the camera's shutter went off. What a fiasco! I finally convinced myself that my attempts were a waste of time, digits and pixels. No eclipse and no fish.

Donna pointed out that there were many attractive birds and occasional alligator heads poking through the surface. I exclaimed that "it's a magazine about fish!" but she had no idea what I was talking about. Maybe I didn't either. Just as well. I finally settled down to photograph birds, on the false assumption that if I wasn't actually looking for a fish, I might find a

fish.

Later, when the boat docked in about two feet of water, I looked over the side and saw small schools of tiny fish swimming near the shore. I didn't bother to ask the guide if he knew what they were but in my mind I *knew* that they had to be baby mud minnows. I really didn't know or care.

One thing I did observe was that all those small lakes and ponds that we had previously toured were covered with a certain kind of weed, if you know what I mean. I tried to show self-control but could not help thinking to myself, "Could there actually be fish in those ponds, or did the alligators eat them all?"



Is this water bird a duck? Those feet beneath the water don't appear to me to be webbed.



Near the shore swam many little fish. These may have been the only fish that I observed in Charleston, South Carolina. By no special authority vested in me, I proclaim them to be juvenile mud minnows. The mud minnow is similar to the finger mullet. It is a small, hardy fish caught in casting nets to be used as bait. It ranges from coastal salt water areas to estuarial systems where the water is brackish. In Australia there is also a fish called the mud minnow. I doubt that they are related.

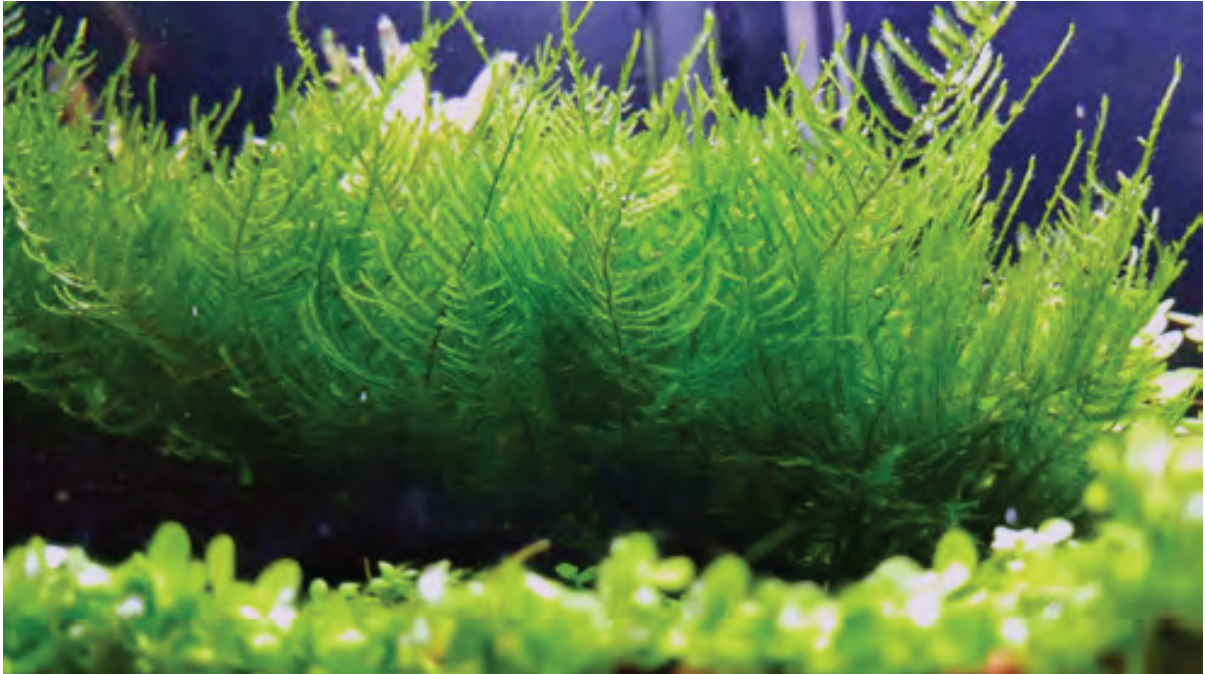


The heron's reflection in the shallow water persuaded me to photograph it.



Moss in Aquaria

Text and Photos by Michael Buchma



Erect Moss, *Vesicularia reticulata*

Moss can be one of the easiest plants to grow in your aquarium. In general, most of the commonly available species of aquatic moss are very easy to care for and require very few demands. Almost every aquarist in the freshwater aquarium hobby has kept Java moss at some time, but what about other types of moss? Do you have the right conditions in your current setup to keep other species? In this article, you will find out. First, we must lay some basic ground rules when it comes to keeping this fluffy stuff.

One of the most important factors in keeping moss is temperature. Moss does not like warm water. For common mosses such as Java Moss (*Taxiphyllum barbieri*) or those from the *Vesicularia* genus, water temperatures up to nearly 80°F are acceptable. For optimal growth, temperatures into the upper 60's to mid 70's are best. Some mosses, such as *Fontinalis* sp., are exposed to very cool water in their natural habitat. This is very true for *Fontinalis* sp. that inhabit northern regions of North America and Europe. In these regions, water temperature can range from the 30's to the 60's. These are obviously not optimal temperatures for most tropical setups. The aquatic plant enthusiast can still grow these types of mosses in cooler aquariums. Hillstream loach and crystal red shrimp aquariums are great aquarium setups for cooler water mosses.

The lighting that is provided to grow the moss is also important, but not as important as you might think. In nature, moss is often found in shaded areas. This is great! This means that you do not need to buy a several hundred dollar lighting system to grow your moss. A single fluorescent tube or basic LED fixture is usually good enough. There are exceptions to this rule, but in general, basic lighting is just fine. If you do keep your moss in an aquarium with intense lighting, you may want to prepare for intense algae growth if your moss is kept directly under the light. Remember how it grows in nature; in the shade. Moss can still be kept in direct lighting; the aquarist just needs to watch the tank parameters to make sure everything is in balance. To keep the water parameters in balance for your moss, you will need to make sure the key planted aquarium elements are just right and water changes are done on a regular basis.

The parameters that must be kept in balance to avoid algal growth on your moss are nitrates, phosphates, CO₂, potassium, and lighting. Since that would be an article in itself, I will stop right there. I suggest performing a web search on NPK ratios for planted aquariums if you are concerned. Water hardness and pH are not too important when it comes to growing moss, just avoid the extremes. Water from your city's water supply is usually just fine.

Reprinted from *Tank Tales* – May 2017 / Volume 46, Issue 5; Aquarium Club of Lancaster County.



Fissidens fontanaus

Many people are accustomed to just throwing a clump of java moss in the aquarium and letting it be. This is fine for breeding purposes, but it is not something you want to do for the mosses that exhibit elaborate patterns in their growth. It is also something you do not want to do for mosses in the *Fissidens* genus. *Fissidens* mosses are very small and do not grow in thick strands, or fronds in moss terminology. To display your moss in an aquascape, you are going to need a piece of wood and sewing thread. Stone or rock can be used, but most mosses attach much easier to wood surfaces, due to the porous nature of wood.

Before just throwing a large clump of moss onto your piece of driftwood, please take this piece of advice—spread it on in a thin layer. Spreading the moss over the wood as a thin layer is very important so that water, oxygen,

and nutrients can flow properly. If you lay it on too thick, your moss may actually stunt or decay in the lower layers. One or two layers is ideal. Next, you will need to tie the moss down carefully, paying extra attention to the space between threads on the wood. If you have too much space in between the threads, then your moss will float away in the tank. Another option for affixing moss to rock or wood is glue. I have personally never used this method, but if you choose to do so, please make sure you use glue that is certified safe for aquarium use. Some aquascaping companies are starting to come out with these types of glues, so your search should start there.

Believe it or not, we are not limited to just Java moss or Christmas moss (*Vesicularia montagnei*). There are dozens of types of aquatic mosses available through online dealers or fellow hobbyists. Before buying any moss from an online retailer, do some research. Some dealers will try to sell moss that is not truly aquatic. Some of the biggest offenders of this scheme are overseas sellers. These types of sellers are to be avoided, not because they sell non-aquatic moss to unsuspecting buyers, but because it is typically illegal.

Phytosanitary certificates are needed to import plants from another country. These certificates are expensive, and if the customs agent notices that your package contains live plants from another country without such a certificate, you may receive a phone call or letter from the authorities. Your package will also be destroyed, and you will not receive a refund.

If you aren't convinced that you NEED some moss in your aquarium, let's talk about the benefits of moss. It's just a plant right? Well, not only is it a plant, but it provides a myriad of other benefits. Moss



Flame Moss, *Taxiphyllum* sp. Flame

is a great hiding place for newborn fry or shrimp. Adult fish will have a harder time trying to pick the newborn fish out of the growth mass of the moss. The moss can even be used as a spawning medium for egg scattering fish. Speaking of fry and baby shrimp, moss is also a breeding ground for microorganisms. Your fry and baby shrimp will fare much better with it in their tank, believe me. Moss, like other plants, also absorbs excess nutrients to naturally purify the water.

In closing, I must stress that you be careful. Once you start collecting mosses, it is hard thing to stop.



The Insane Fishkeeper

by Bill Amely

I have been a fishkeeper since I was a kid, beginning with the obligatory goldfish in a bowl. I won those goldfish at Coney Island by tossing a ping pong ball into one of those small bowls. They were the most expensive goldfish I've ever owned, considering the money I spent on winning them.

I received my first real aquarium in 1973, at the tender age of 15, as a Christmas gift from my mother. It was a 15 gallon, stainless steel Metaframe with a slate bottom. Boy, was that tank heavy, even without water or gravel in it! I purchased a pair of 'sunset' (now called blue parrot) platies. A neighbor gifted me with several other fish for the tank, including a large fantail goldfish and a silver angelfish (a no-no for fishkeeping today).

I've had many different kinds and sizes of aquaria since those days, and a multitude of different fish. I've had small fish, large fish, freshwater and saltwater. I've used sand, gravel, crushed coral, and no substrate at all. I've also broken every rule of fishkeeping that you can think of: too many fish in a tank, no filtration where there should have been, no quarantine tanks for newly acquired fish, infrequent water changes, and have kept incompatible fish together. Holy smokes! What the heck was I doing? What was I thinking? Was I even thinking? They all look so good! I wish I could keep them all at once in one big aquarium! But no way, José (or in my case, no way Bill)! This isn't dreaming; it's a nightmare!

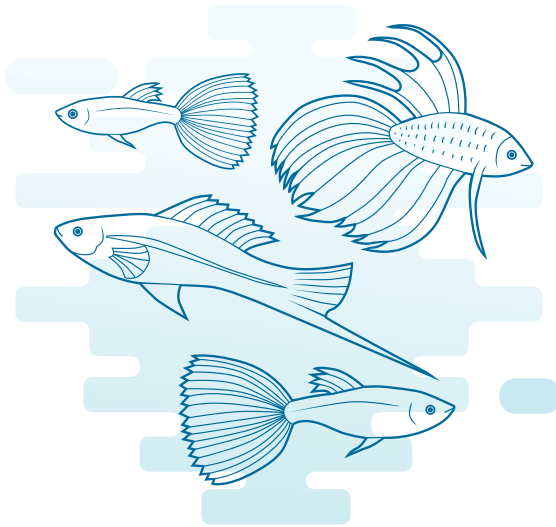
Of course I get it right most of the time, and when I do my aquariums are things of beauty. When I don't though, they're beastly! While this article may expose me as an Insane Fishkeeper, I would like for the reader to come away with an understanding of how to avoid such mistakes.

I also want to share how much fun it has been to own all the beautiful fish that I have been blessed to keep over the years. I have read many books on how to Do It Right, but at times I can be lazy and take the occasional (OK, maybe not so occasional) shortcut. Overall though, I have done well, and aspire to keep those shortcuts few and very far between.

I have bred and raised both egg laying species (black tetras, zebra danios, kribis and bettas) and livebearers (platies, swordtails, guppies). I have belonged to several aquarium societies (Greater City, Brooklyn, East Coast Guppy and American Livebearer associations, International Betta Congress and Big Apple Betta Breeders) over the years. Through these groups I've met so many

people who love fishkeeping as much as I do. It's been a blast to have seen and/or purchased so many beautiful fish! I can't wait to see what the future holds!

My hope for you, the reader, is that you enjoy and cherish the aquarium hobby as much as I have. Just don't be lazy with it! Avoid shortcuts, and you will love the hobby and *not* be an Insane Fishkeeper! Happy Fishkeeping!





Meeting Reminders



Almost every month at least one meeting reminder postcard is returned undelivered. Sometimes the member moved and just forgot to update his or her contact information with Greater City. Other times, well it's a mystery—the address was correct, but the Post Office marked it as “undeliverable.”

Unlike some aquarium societies, at Greater City there is never a charge for non-members to attend, there is no “bidder card fee” to bid on items in our monthly auctions, the refreshments are free to everyone at the meeting, and anyone can purchase raffle tickets. But membership does have its privileges, including this award winning magazine, door prize chances, the ability to participate in our bowl shows, and advance reminders of our meetings. If you have an e-mail account, please consider getting your meeting reminders by e-mail, instead of by postcard. You will be getting two notices (one a week in advance, the other a day in advance) instead of only one, and the chances of non-delivery are virtually none (unless you change your e-mail address). While it's a very small thing, you'll even help the environment by using less paper. An e-mail sign-up sheet is at the membership/Modern Aquarium table, or send an e-mail to gcas-webmaster@usa.net.

Mighty Rivers

a review by Dan Radebaugh



Back in the August 2012 issue of **Modern Aquarium** I reviewed two TV fish shows, **Monster Fish**, and **River Monsters**. Both have been ongoing (and have covered pretty much the same species) since then. The “hook” for **River Monsters** was that a biologist and expert angler (Jeremy Wade) was scouring the globe investigating stories of man-killing fish. In the process he introduced us to species and habitats around the globe that most of us knew nothing about, and either confirmed or debunked the likelihood of a serious predatory threat to humans from these very large fish.

Monster Fish did pretty much the same thing, but without the over-dramatization and exaggerated “mortal threats” that these species represented. I’ve continued to watch both over the years since, though I must say that my interest level has waned of late.

In **Mighty Rivers**, Wade surveys the current ecological status of six of the world’s great rivers: the Ganges, the Yangtze, the Danube, the Mississippi, the Amazon, and the Zambezi.

Realscreen notes that, “Wade will attempt to understand how exploitation and pollution are contributing to the ruin of rivers that were once the lifeblood of communities by trekking to the Amazon (Brazil), the Ganges (India), the Yangtze (China), the

Mississippi (U.S.), the Danube (Central and Eastern Europe), and the Zambezi (across Africa).

Meeting the people who live alongside these rivers, Wade will gather intel about their sustainability in hopes of improving the health of these rivers.”

“In just the last few human generations, the huge and outlandish predators that lurk in our rivers have all but disappeared,” said Wade in a statement. “I want to find out why this is happening and what we can do about it—because we depend on water just as much as any fish. So, in these new journeys I’m not just fishing for monsters. I’m fishing for answers.”

Though one of the online viewer critiques complained that the new show was boring and featured too little action, I do not share that view. If anything I find the new series less contrived, and more relevant to the respective ecological, socio-economic, and political situations than was the previous series, even though those concerns were alluded to in **River Monsters** as well.

The series premiered on April 8. I recommend it. You can catch the episodes on Animal Planet, or online at:

<https://www.animalplanet.com/tv-shows/jeremy-wades-mighty-rivers/>



Pictures From

Photos by Joe Gurrado



Our Last Meeting



Our speaker, Artie Platt (L), and our President, Horst Gerber, finally arrived after a major traffic jam in the Bronx.



Auctioneer Ed Vukich with runners Jeff Bollbach, Artie Platt, and Ron Webb



Horst with Bowl Show winners Bill Amely (above) and Richie Waizman (below)



Opposite page (from middle left): Ed Vukich and Ron Webb prepare for the meeting by filling out their auction forms. Meanwhile Herb Karen, Joe Ferdenzi, and Dan & Marsha Radebaugh relax before the meeting begins, Robert Kolsky eyes some of the raffle prizes, and Treasurer Jules Birnbaum is ready to rumble!



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GCAS Happenings

June

Last Month's Bowl Show Winners:

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|-------------------|---------------------------------|
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| 2 WILLIAM AMELY | BLACK & ORANGE DOUBLETAIL BETTA |
| 3 RICHARD WAIZMAN | BLACK DRAGON BETTA |

UNOFFICIAL 2018 BOWL SHOW TOTALS:

WILLIAM AMELY	17	RICHARD WAIZMAN	9	CARLOTTI DEJAGER	1
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A WARM WELCOME BACK TO RENEWING GCAS MEMBERS NICK CAPUTO, WALLACE DENG, RON KASMAN, JASON KERNER, TEMES MO, ARTIE PLATT, MARC RICHMOND, AND WAYNE "JUICE" STEPHENSON!

Meeting times and locations of some of the aquarium societies in the Metropolitan New York City area:

GREATER CITY AQUARIUM SOCIETY

Next Meeting: July 11, 2018

Speaker: Salvatore Silvestri

Topic: *Apistogramma and Other Dwarf Cichlids*

Meets: The first Wednesday of each month (except January & February) at 7:30pm:

Queens Botanical Garden

43-50 Main Street - Flushing, NY

Contact: Horst Gerber (718) 885-3071

Email: pilotcove43@gmail.com

Website: <http://www.greatercity.org>

BIG APPLE GUPPY CLUB

Meets: Last Tuesday each month (except Jan, Feb, July, and August) at 7:30-10:00pm.

Alley Pond Environmental Ctr.: 228-06 Northern Blvd.

Contact: Donald Curtin (718) 631-0538

BROOKLYN AQUARIUM SOCIETY

Next Meeting: June 8, 2018

Speaker: James Perrenod

Event: *Discus Keeping Q & A*

Meets: 2nd Friday of the month (except July and August) at 7:30pm:

NY Aquarium - Education Hall, Brooklyn, NY

Call: BAS Events Hotline: (718) 837-4455

Website: <http://www.brooklynaquariumsociety.org>

LONG ISLAND AQUARIUM SOCIETY

Next Meeting: June 15, 2018

Speaker: TBA

Topic: TBA

Meets: 3rd Friday of each month (except July and August)

at 8:00 PM. LIAS Meetings are held at SUNY Stony Brook's Maritime Science area. Room 120 in Endeavor Hall on the State University at Stony Brook Campus, Stony Brook, NY 11790

Email: president@liasonline.org

Website: <http://liasonline.org/>

EAST COAST GUPPY ASSOCIATION

Meets: 2nd Tuesday of each month at 8:00 pm.

Alley Pond Environmental Ctr.: 228-06 Northern Blvd.

Contact: Gene Baudier (631) 345-6399

NASSAU COUNTY AQUARIUM SOCIETY

Next Meeting: June 12, 2018

Speaker: None

Event: *Silent Auction*

Meets: 2nd Tuesday of the month (except July and August) at 7:30 PM. Molloy College, at 1000 Hempstead Avenue, Rockville Centre, NY, in the PUBLIC SQUARE BUILDING, room 209A. See website for directions.

Contact: Harry W. Faustmann, (516) 804-4752.

Website: <http://www.ncasweb.org>

NORTH JERSEY AQUARIUM SOCIETY

Next Meeting: June 16, 2018

Speaker: Karen Randall

Topic: *Basics of Aquatic Horticulture/Asian Plant Travelogue*

Meets: 12:30 PM - 3rd Saturday of the month, at Clark Public Library in Union County, just off the Parkway at exit 135

Contact: NJAS Hotline at (732) 332-1392

Email: tcoletti@obius.jnj.com

Website: <http://www.njas.net/>

NORWALK AQUARIUM SOCIETY

Next Meeting: June 21, 2018

Speaker: Mark Denaro

Topic: *CICHLIDS I HATE!*

Meets: 8:00 P.M. - 3rd Thursday of each month except for July & December at: Earthplace - the Nature Discovery Center - Westport, CT

Contact: Sal Silvestri

Call our toll free number (866) 219-4NAS

Email: salsilv44@yahoo.com

Website: <http://norwalkas.org/>

Remote Floaters

In spite of popular demand to the contrary, this humor and information column continues. As usual, it does NOT necessarily represent the opinions of the Editor, or of the Greater City Aquarium Society.

A series by "The Undergravel Reporter"

There are "purists" in the aquarium hobby community who insist that everything in a tank exactly mimic the "natural" environment of its inhabitants. Then, there's someone like me who believes that fish can and do adapt to their surroundings. So what if there is a topless mermaid flirting with a deep sea diver in front of a bubbling clam or treasure chest? The fish accept it.

Hammacher Schlemmer is selling a **Fish Feeding Submarine**, a "remote controlled submarine that captures images and videos of fish while they are feeding from its built-in food hopper. The sub floats, dives, climbs, and moves forward / backward / left / right from an infrared remote that also activates the sub's twin LED spotlights. The detachable hopper extends from the front, enabling the sub's built-in camera to capture 1280 x 960 still images and 640 x 480 video; footage is stored on integrated 256 MB memory."¹



The Fish Feeding Submarine

The price of this remote controlled underwater camera and fish feeder is \$69.95, and it comes with a "lifetime guarantee."

Hammacher Schlemmer is America's longest running catalog store. The company provides unique products that solve problems or represent the only one of their kind, and backs its products by a rather famous Lifetime Guarantee of Complete Satisfaction.

Hammacher Schlemmer is not known for aquarium hobby gadgets, but their on-line catalog also has an inflatable remote-controlled shark and clownfish that "swim" through the air with the same graceful movements as underwater.²

Unlike other neutrally buoyant aircraft with dedicated vector propellers, they use reciprocating tail fins that provide forward motion, just as a real shark's or clownfish's tail pushes against water. Deft control of the infrared remote transmitter's rocker-arm switch moves the tail back and forth for propulsion indoors up to 10' away within line of sight.

Faster switching results in vigorous "swimming," while holding the switch in the left or right position executes wide, arcing turns. A weighted ventral pod slides forward and backward on a fixed rail at the remote's command, raising or lowering its pitch for climbs or descents.

You (the buyer) must supply the helium (which, they indicate, is available at any party supply store), as well as the \$39.95 purchase price.

Control a fish in the water, or one in the air. For once I can be in control!



References

¹ <https://www.hammacher.com/Product/91619?sku=91619>

² <https://www.hammacher.com/Product/81696?sku=81696&refsku=91619&xsp=2&promo=xsells>



Fin Fun



This month's meeting is the opportunity for you to ask questions and get help from some of the "experts" in the Greater City Aquarium Society. So, this month's **Fin Fun** will test your "expertise" in various areas of the aquarium hobby.



- 1) Which of these species does **not** have a labyrinth organ?
☐ *Betta splendens* ☐ Lungfish ☐ Leopard Ctenopoma ☐ Dwarf Gourami
- 2) "Soft" water means it:
☐ Is not frozen ☐ Is carbonated ☐ Has few calcium ions ☐ Is artificially flavored
- 3) Dither fish:
☐ Bring hiding fishes out ☐ Are shy and timid ☐ Are feeder fish ☐ Are diseased
- 4) Carbon is sometimes used in the aquarium to:
☐ Make "black water" ☐ Absorb impurities ☐ Raise water hardness ☐ Prevent rust
- 5) The person pictured at the top right of this page is:
☐ Obviously intoxicated ☐ Deceased ☐ Herbert Axelrod ☐ A former GCAS President
- 6) Red leaves on an aquatic plant usually means:
☐ It needs bright light ☐ It's diseased ☐ It's poisonous ☐ It's autumn
- 7) Catfish:
☐ Make "meowing" sounds ☐ Have barbels ☐ Lack dorsal fins ☐ Eat fecal detritus
- 8) Ammonia
☐ Is a tank cleaner ☐ Must be diluted with bleach ☐ Is harmful to fish ☐ Is harmless

Solution to our last Puzzle: 2017-REDO

Title of Program	Speaker
Killifish Demystified	Joseph Ferdenzi
Breeding Show Guppies	Michael Marcotrigiano
Butterflies in the Water	Michael Lucas
My New Fishroom	Joseph Graffagnino
Decorating Your Fish Tank	Horst Gerber
The Dragon Behind The Glass	Emily Voigt
Discus	James Perrenod
Koi Appreciation — Kohaku	Karen Pattist



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