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April 2025
volume XXXII
number 2

Greater City Aquarium Society - New York

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Series III Vol. XXXII, No. 2, April, 2025

ON THE COVER

Our cover photo this month came to us from Elizabeth Weinberg, a daughter of long-time GCAS friend Judith Weinberg. It features a beautiful pair of *Paratilapia polleni*, East Coast “Fony” sp., Bo and his female, Belle.

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From the Editor

by Dan Radebaugh

Welcome back to another season with The Greater City Aquarium Society! Judging by last month's meeting, the increased attendance at our meetings since moving to the Alley Pond Environmental Center seems to be both real and ongoing! Well, the more the merrier! More chances to meet new and interesting people, more fish for our auctions, and more interest and input from our members!

Our authors in this month's issue include some familiar names of members who have well established their writing chops both recently and over the years. Just for fun, when you have a moment look through the table of contents on page one. These folks have been making marvelous contributions to our club, as well as to our combined knowledge about fish and their keeping!

Do you keep fish? Do you like to do it? Tell us about it! What fish do you like? Was



keeping them easy, or were there some surprises involved? How did you handle those surprises? Inquiring minds want to know!

An organization like Greater City isn't made up only of people who already know everything. There are lots of ways to learn things! Speaking with people with similar interests, reading, listening, some degree of experimentation (combined with the reading and listening) will really help you along your way! And it's a two-way street! You might have gathered knowledge that others don't yet have. So share it! That's why we have speakers. We all have things that we know, as well as things that we don't (yet).

Modern Aquarium is produced by and for the members of the Greater City Aquarium Society. You, our members, are our authors, and with ten issues per year, we always, *always* need more articles. I know that many of you are keeping and/or breeding fish that I would like to know more about! I'm certain that other members would be interested as well. Share your experiences with us. Write about it! If you're a little unsure about the state of your writing technique, don't worry—that's why editors were invented!

So if you have an article, photo, or drawing that you'd like to submit for inclusion in **Modern Aquarium**, it's easy to do! Just fax it to me at (877) 299-0522, email it to gcas@earthlink.net, or just hand it to me at a meeting. However you get it to me, I'll be delighted to receive it! Enjoy!



Aquarium Care of Cichlids



by Greater City member Claudia Dickinson
(Animal Planet® Pet Care Library)

Hardcover — Also available on Amazon Kindle

<https://www.amazon.com/Aquarium-Cichlids-Animal-Planet-Library/dp/0793837774>





GCAS Meeting Schedule 2025

March 5	Breeder Boxes
April 2	Natural Aquariums, Part 1
May 7	Natural Aquariums, Part 2
June 4	Guppies
July 2	The Balanced Aquarium
August 6	Night At The Auction
September 3	TBD
October 1	TBD
November 5	TBD
December 3	Holiday Awards Dinner!

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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 at (718) 458-8437, email to gcas@earthlink.net, or fax to (347) 379-4984. For more information about our club or to see previous issues of *Modern Aquarium*, you can also go to our Internet Home Page at <http://www.greatercity.net>, <http://www.greatercity.org>, or <http://www.greatercity.com>.

President's Message

by Warren Feuer

Do you have a hobby? I imagine that, since you are reading this issue of **Modern Aquarium**, it's a good bet that you consider yourself a "tropical fish hobbyist." Here are some characteristics that I found common when looking up the definition of a hobby:

- Something done in one's leisure time for pleasure
- An activity or pursuit outside of one's occupation engaged in for relaxation
- Something done for pleasure, not business or profit

Does that sound like what keeping tropical fish means to you? Perhaps keeping fish is more to you, maybe an "obsession?" I can tell you that over the years the hobby becomes an obsession. How else can you explain the fact that many of us have a significant number of fish tanks in our houses and spend a relatively large percentage of our disposable money on fish and what's needed to keep them?

It's not necessary to have only one hobby. In fact, the more interests you enjoy spending time on, the better. I myself have several hobbies, none of which take up as much of my time as my fish do. Let's see, there's my fountain pen collection. The fact is I can only write with one pen at a time. There's my watch collection. The problem is fine watches are expensive and I can only wear one watch at a time! So that hobby is limited in scope. And there's my long-time love, the automobile. Over the years I have owned some pretty nice cars. Certainly all of them before having children, and most of them before getting married. If you think good watches and pens are expensive, they are bargains compared to most of the cars I've wanted but never bought.

Hobbies are terrific and important things to have. Now that I am retired, I have a great deal of the "leisure time" that I referred to above. And my hobbies fill a substantial portion of the time that I used to spend working. While my other mentioned hobbies don't take up too much of my time, my tropical fish keeping allows me to stay quite busy. I probably spend a minimum of an hour each day just checking out my fish tanks and making (hopefully) minor adjustments as needed. And there are days I spend quite a few hours with my fish. The other day, for example, I was in my basement fish room from 11:30 in the morning until 3:30 that afternoon with water changes and filter cleanings. I had my iPhone on for music and the time just flew by quite pleasantly. I could never have spent that much carefree time doing that when I was working.

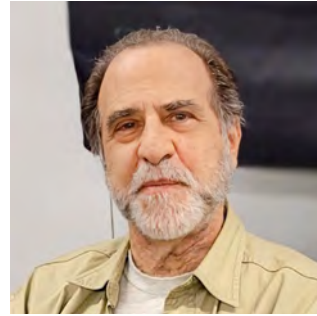
In addition, my fish keeping has enabled me to develop a network of friends that I spend time with on an almost weekly basis. Like me, they are retired, and this freedom allows us to meet for coffee and snacks with the excuse of getting together only to pick up live food for our fish!

Part of the social fabric of the hobby are monthly meetings of aquarium societies. Many of our members also belong to some of the other aquarium societies that exist. When I walk around the room during our meetings, I see our members and other meeting attendees talking, laughing and sharing knowledge and experience. While keeping fish is great, it's the social aspect that makes our hobby so special and popular, in my opinion. In addition, you can't beat our monthly auctions for the variety and quality of fish and plants that are available.

I have been to pen shows, pen expos, car shows, and car hobbyist get togethers. For example, there's a group of Ferrari owners that meets each Sunday morning in a parking lot near where I live. The cars are great to look at, and for the most part the owners are friendly, but I never feel the connection that I have when I go to a fish convention or society meeting. Maybe that's because I'm not that engaged in any of those other hobbies, but I suspect it's largely because I don't own a Ferrari, thus I am only a spectator.

In my role as President of the Greater City Aquarium Society, I hope to share that love and passion for our mutual hobby and keep both GCAS and the hobby going strong. I was very pleasantly surprised by the number of entries in last month's Bowl Show. It would be great to keep that part of each meeting vital with multiple entries of great fish. I'm sure many of you have amazing fish in your collections that the rest of us would like to see. What do you say? Bring in one of your fish for the rest of us to admire. Show us how you've been able to raise beautiful and amazing fish.

And, finally, why not participate in our Breeder's Award Program? While keeping fish successfully is a great accomplishment, it's nothing like the feeling of breeding your fish. Take it from me, as a prior chair of that program as well as participant, I can tell you that breeding fish adds a level to your hobby experience beyond just keeping fish. Breeding endangered as well as fish no longer in the wild is a really important part of our hobby. If you have any questions regarding our Breeder's Award Program, don't hesitate to ask! Enjoy the meeting and celebrate our hobby!



Warren





GCAS Thanks You!

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BOWL SHOW RULES

There is a Bowl Show at every GCAS meeting, except our Night at the Auction/ fleamarket meeting and our Holiday Party and Awards Banquet meeting. Bowl shows are open to all members of GCAS. Rules are as follows:

- Only current GCAS members may enter fish in the Bowl Show.
- There is a limit of 2 entries per member per meeting.
- Unlike some other clubs, every month is an “open” Bowl Show at the GCAS (i.e., there is no “theme,” such as that one month cichlids are judged, the next livebearers, the next anabantoids, etc.).
- Any fish that wins any prize (1st, 2nd, or 3rd) may not be entered again in the same meeting year.
- B.Y.O.B. (Bring Your Own Bowl!) Entrants are responsible for providing suitable containers and suitable water for their fish. These containers must be clear on at least three sides.
- Only one fish per container (i.e., no “pairs”).
- No plants, ornaments, or equipment (filters, airstones, etc.) are allowed in the judging tank (an external mirror, or opaque cards between containers is acceptable, as is a cover that does not obstruct side viewing).
- Points are awarded: 5 points for 1st Place, 3 for 2nd Place, and 1 for 3rd Place.
- Ribbons are awarded: blue for 1st Place, red for 2nd Place, and green for 3rd Place.
- The person with the most points at the end of the meeting season receives the Walter Hubel Bowl Show Champion trophy at the Awards Banquet.
- The decision of the judge(s) is final.
- A running UNOFFICIAL total of the points awarded is printed in **Modern Aquarium**. Only the tally of points maintained by the Bowl Show Coordinator is official.
- **In case of ties:**
 - 1st Tiebreaker – most 1st Places
 - 2nd Tiebreaker – most 2nd Places
 - 3rd Tiebreaker – most entries

Little Tank of Plants

Story and Photos by Stephen Sica

When I was contemplating writing something or other on a cold January afternoon in 2025, I went down to my basement to look at my fish tanks for a dose of inspiration. I guess that I should describe these fish tanks as aquariums since one only has plants but no fish. Another was meant to be fishless but an immaculate conception somehow caused it to give birth to two different fish species. This was a plants only ten gallon aquarium that I have kept for more years than I can remember. I keep extra plants in this tank until I have a need. Most of the plants were purchased at GCAS auctions. I'll guess that one or two came with eggs that managed to hatch. Ha! Do you think that I should apply for breeder's award points? Maybe I should receive bonus points for all my hard work!

I think that one fish has grown into an emperor tetra while the other is still unknown to me. So far, it looks like a small clown loach but I think that is highly unlikely. It might be some sort of a black and gold cichlid. Both fish were tiny specks when I initially discovered them on separate occasions after motion in the tank caught my eye.

A few weeks prior I was admiring a friend's nicely growing plants and decided that I would like to make another attempt to grow, for me, a different type plant. All my current plants are anubias, ferns and moss so no substrate is needed. I go for simplicity versus skill. For all the articles that I have written for **Modern Aquarium** during the last twenty years or so, I doubt that more than five, maybe less, have been about plants. This excludes duckweed, which can be fascinating, if you know what I mean. I decided that my new plant growing experiment would be undertaken on an extremely small scale.

One of my bettas had passed a few weeks earlier so I resurrected its 3.4 gallon tank. I covered the bottom with about two inches of



used CaribSea Eco Planted black substrate that was languishing in a three gallon bucket in my garage. Being late autumn at the time, there were no spiders in the bucket, just the remnants of their webs. It didn't take much gravel to cover the little tank's bottom.

I completed the whole setup with a small sponge-like filter that Joe Ferdenzi lectured on in early 2024. I had a small twenty watt heater that was just perfect and a clip light with white and red LEDs. I believe that red LEDs versus blue ones are superior. I think that I once read somewhere or someone told me that red light was superior. I am no plant light specialist so maybe a member or someone could write about the efficiency of one color over the other, including white light too.

I think that this would make a good article or mini lecture. Someone out there must have knowledge about aquarium plants and light colors. I wonder if other colors are good for plant growth?

Now that I had my little tank set up, I went online to search for an easy to grow plant with reddish color. Also, I wanted one that was new to me. Well, a new plant would be an easy task based upon my current selection. Most of all, I wanted one that was easy to grow and even more important, to keep alive! I found the Red Tiger Lily, a pond plant, described as a sprouted bulb with leaf that you either lay on top of the substrate

or push the bulb into the substrate about one-third of its body mass to keep it steady. Most vendors did not guarantee success. They said that the leaves might melt from the bulb but it should start to sprout again within a few weeks. I thought that this was the plant for me with its reddish color and growing ease until I discovered its adult size. I calculated that a single plant might fit in my little tank. Fortunately, I learned that there was an identical plant commonly known as the Dwarf Lily, or *Nymphaea stellata*, that grows to almost five inches. This plant would be perfect for my little tank so I purchased two bulbs from an online vendor. Both bulbs arrived with small reddish leaves.

I planted both about six inches apart. One lost its leaves after two or three days but the other stabilized with all its leaves. After two weeks or less, the leafless bulb began to sprout shoots that appear to be new leaf growth. I put a transparent plastic cover on the tank and turned up the white light one notch to try to keep the leaves pink or red. The light is on for six hours daily. This plant is supposed to grow at a moderate rate. Nutrient supplements should help it grow but I think, if the lighting is sufficient, these are optional.



With some skill or, in my case a bit of luck, the bulb should develop green, red and pink leaves. I believe you will agree that red and pink are the colors to strive for since just about every other plant in nature is green, and we all have lots of green plants in our aquariums. My personal goal is always to have my plant survive and grow, so I guess that it wouldn't be horrible to have a few more green plants in a tank as long as they don't eat the fish!



Florida
AQUATIC NURSERIES



Apistogramma borellii

A Beautiful Dwarf Cichlid from South America

by Joseph Ferdenzi

From my very beginning in the hobby, I've always admired the genus *Apistogramma*, which consists of many diminutive species of cichlids from South America. Over the years I have been fortunate to acquire a variety of species, and even more fortunate to have spawns from a few of them. They are lovely fish, but they are far from the easiest fish to maintain and to successfully breed in the home aquarium. Nevertheless, I think they are worth the effort.

Recently, in April of 2024, I managed to acquire a pair of *Apistogramma borellii*, a fish I've never kept before but was always hoping to find. The fish is named after a noted Italian zoologist Alfredo Borellii (hence the two "eyes" at the end of the species name). I considered the timing very fortuitous, because I had an empty 20 long waiting for them in my fish room.

The tank was equipped with a 50W heater and two box filters. The box filters were outfitted with a layer of crushed coral topped by a sponge insert. I also placed some driftwood in the tank along with five small

ceramic caves. The plants largely consisted of a *Cryptocoryne* in a terracotta pot, some Java Fern, and some Java Moss. I did not have gravel in this tank, but being an old established tank, it had mulm and some balls of algae covering the bottom.

Although young, the pair was large enough to eat adult brine shrimp (live) and chopped up live blackworms. Occasionally they were also fed small pellets and crushed flake food.

Approximately three weeks after having acquired them, they spawned. I was a bit astonished at this, but I think it helped that these fish were themselves tank-bred. Wild fish are generally

more of a challenge. Since that first spawn, they have produced many fry on a somewhat regular basis.

The water parameters in the tank are kept fairly stable. The temperature is in the 78-80° F range (my ambient room temperature varies by season, but is usually somewhere between 73° and 80° F). The pH is always alkaline (i.e., greater than 7.0), and gH (general hardness) is approximately at 220 ppm, or 13



Male Apisto



Caves



German feeding ring

dkH (degrees of caronite hardness) (the dkH of my tap water, measured the same day, was 6 dkH, which is considerably softer).

As is true of almost all Apistogrammas, the female *borellii* turns a beautiful yellow when she is spawning or guarding eggs and fry. She usually keeps the male at some distance during that time, but there is very little in the way of aggression between them. She is, like most cichlid mothers, a very good parent. The male also does his part, and I have never seen him attack the fry.

Although there are no other fish in the tank that could prey on the youngsters, my usual protocol is to move the fry to a separate container so that I can better control their feedings. I start them off on live vinegar eels, and after a few days I begin feeding newly hatched brine shrimp.



Female guarding eggs

My success in raising the fry has been inconsistent. Most of the time they reach juvenile stages on the way to adulthood, but sometimes fry die for reasons I do not fully understand. When I remove fry from the care of the parents, they are always placed in a container that is 100% water from the tank in which they were born. Nevertheless, this does not always guarantee success. Their broods average around 20-25 fry, so that if even half survive to juvenile stage, I am fairly satisfied, though I do hope to improve on that on a regular basis as time goes on.

No matter the difficulties, I am extremely happy to have acquired this fish. Their beauty and graceful behavior certainly make the effort that is involved in keeping and breeding them worth it.



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<https://moaph.org/>

How To Breed Cardinal Tetras

(Without Even Trying!)

by Thomas Warns



The plants have certainly overtaken the tank, but these fish seem to find comfort in the plant cover, especially at night, so it must be somewhat similar to their native ecosystem.

For a number of years I have had a pair of red turquoise discus in a 37-gallon tank in my bedroom. In the early days of COVID, while working from home 5 days a week, I conditioned the discus, added a breeding cone, and got them to spawn fairly regularly. Unfortunately however, I was never able to get the fry to survive longer than about a month.

Eventually, the plants in the tank started to grow around the breeding cone, which caused the discus to lose interest in mating. Given my bad luck getting the fry to survive, and that the fish seemed happy and healthy, I decided not to clear a space around the breeding cone, and not to bother with trying to get them to spawn again.

After some time went by, I decided to add some dither fish and make the discus tank more of a community tank. I settled on cardinal tetras, given their similar colors and preference for warm water. I picked up a dozen at Tropical Showcase a little over a year ago. The cardinal tetras weren't labeled jumbo, but they were quite large for cardinal tetras. Despite cardinal tetras having a reputation for fragility, I lost just a single one in the last year (the day after I added the group of twelve to the tank).

The tank has been quite stable over the last year, and provides something relaxing to look at before bed. I have been on top of water changes, however I have admittedly let the plants run a bit wild. I will remove

any decaying or dead leaves, but those are few and far between. I just make sure to keep an area open in the top right corner of the tank for the discus. Whenever I enter the room, the discus will swim straight up to that corner to see if I'm going to feed them (they never do this for my wife, much to her chagrin). Otherwise, I assume the abundant plant cover in and above the water is likely similar to the various tributaries of the Amazon River that cardinal tetras and discus call home.

I had a separate tank with a few corydoras in it that I wanted to breed. I had little success with that for reasons I still don't fully understand, so I researched whether it was possible to breed cardinal tetras at home. After sorting through a raft of poorly-written, clearly incorrect AI-generated articles about cardinal tetra breeding (when did these AI-generated articles become so widespread?), I found a few forums where reputable hobbyists seemed to share story after story about the difficulty of breeding cardinal tetras.

Many complained about the difficult water parameters necessary, while others griped that the eggs were extremely photosensitive. Having already struggled to breed *Julii corydoras*, I decided to be content with a tank of healthy fish, and not to try breeding them.

As it turns out, perhaps not trying to breed those cardinal tetras was the best thing I could have done. While performing a water change one winter night, I saw a tiny cardinal tetra fry hiding just above my coarse gravel bottom, and just below the edge of the discus breeding cone. After several minutes of looking, I spotted at least two more, both hovering just above the gravel, occasionally darting into it when larger fish swam nearby.

It appears that my plant cover and coarse gravel may have been the keys to success. I set up the tank over a decade ago, but I am fairly certain I purchased the coarsest size of Estes' Spectrastone Premium Aquarium Gravel at the store. The large gravel stones inevitably have



While both discus lurk in the background, you can see several fully-grown cardinal tetras, one juvenile that likely hatched a month ago, and one fry that looks to have just started swimming freely. Can you spot that little guy?

gaps between them. Once the cardinal tetras spawned, at least some of the eggs must have slipped between the gravel and avoided predation from the adult cardinal tetras and discus. The gaps in the stones and canopy of leaves would have blocked most of the light from reaching the eggs. Once hatched, the same gravel, along with the abundant plant cover, would have likewise given the cardinal tetras a chance to avoid being a snack from the bigger fish in the tank.

One of the other key factors for successfully breeding fish is water chemistry, and apparently I had that right too. Full water readings are provided at the end of this article, but my water was soft and pH just a touch above 6.0. The cardinal tetras fortunately like it warm, like the discus. It also helped that I feed my discus a generous diet of brine shrimp, bloodworms, and the occasional beefheart and blackworms. The cardinal tetras patrol the bottom of the tank and catch anything the discus fail to eat towards the top. In other words, I was unintentionally conditioning my cardinal tetras for breeding. In addition, since the tank has been running for over a decade and is heavily planted, there must be enough micro-organisms in the tank to feed the fry initially (only very recently have I occasionally dropped finely crushed flake food in an attempt to feed the fry).

It seems that since Christmas, the cardinal tetras continue to spawn. There are now several generations of cardinal tetras all enjoying the same tank. The first generation of offspring is now about half the size of the full-grown adults, and there are a few other cardinal tetras of various smaller sizes. They tend to striate themselves nicely, with the smaller fish staying closer to the bottom of the tank and often hiding under the bottom lip of the discus breeding cone. I have decided to let nature run its course in this tank, so I am keeping the fry in the tank rather than removing any fry the moment I see them (and given the plant cover, it would be difficult to do so if I wanted to). While that may reduce the number of fry reaching adulthood, a few are now big enough that they do not appear to be threatened any more, and there are already enough cardinal tetras in the tank. If the cardinal tetras continue to spawn, perhaps you'll see some in an auction at GCAS soon, so perhaps you too will have luck spawning these delightful fish without really trying.

Current water parameters (measured with API 5-in-1 Aquarium Test Strips):

pH: 6.0 to 6.5

Carbonate Hardness: approximately 0ppm

General Hardness: 30ppm

Temperature: 79 degrees Fahrenheit



Who Are We?

by Marsha Radebaugh

In its 100+ years of existence, Greater City Aquarium Society has had a membership of thousands. Each month, with the exception of those during the Pandemic, our meetings have upwards of 60 members and visitors in attendance. We all know who the “stars” are, the officers, presenters, regular runners, etc. are individuals well known to the rest of us. There are those, however, who quietly and consistently attend most if not all meetings. We sit beside each other, sometimes chatting, sometimes not, without any idea who are neighbors are outside of this room. Well, I think it’s time we found out. As Membership Chair, I have the opportunity to meet and greet each of you, checking you in and handing you your **Modern Aquarium** issue, your door prize ticket and collecting dues. I know who you are! But do you? So, as often as I can, I’m selecting a loyal member and introducing him or her to the rest of you in this column.

Meet Denver Lettman



Brooklyn-raised, Jamaican-born, Denver Lettman is a mainstay of the GCAS. You will see Denver at just about every meeting of the club. He’s soft-spoken and doesn’t draw a great deal of attention save for his imposing presence. He’s one of our most devoted members, so there’s a good chance you know him but don’t actually “know” him, since he rarely misses a meeting.

Denver began keeping tropical fish as young boy, having been introduced to the hobby by his cousin. Here we go again, with so many hobbyists joining the fold via family influence. He started with a 29-gallon tank keeping goldfish, guppies, and two Oscars. Of course, we know where that will lead.

Now living in Queens with extended family, Denver has more than 14 tanks in various stages of operation. The largest is his 150-gallon tank, which houses two Frontosas he proudly describes as having gotten from his late friend “Juice” as well as *Placidochromis phenochilus*. He also likes planted tanks, getting Anubias plants from Joe Ferdenzi whenever possible, and keeps some Dwarf rainbows as well. And, in his “spare” time he also maintains a tank of Roseline sharks for a friend in Brooklyn. Spare time being in quotes as I can’t imagine Denver has much of that. To begin with, aside from making a living in carpentry, Denver belongs to three aquarium clubs: Brooklyn Aquarium Society, Nassau County

Aquarium Society, and last but far from least, Greater City Aquarium Society. We lucked out because Denver’s good friend Wayne “Juice” Stephenson learned of GCAS from Victor Hritz and joined, telling Denver how much he enjoyed the meetings. Sadly, Juice has since passed away.

Beyond fish keeping and carpentry, Denver is an avid tennis player and talented artist. You may have seen some of his artwork in **Modern Aquarium**, as he’s taken on the cartoonist role from the late Elliott Oshins.

So thank you Denver, for almost never missing a meeting and sharing your wealth of knowledge and talents with GCAS.



A Life In Fish: Borneo-ish

by Jason Gold

Until I was six we lived in the Bronx in an apartment building on Henry Hudson Parkway. There was a big patch of woods right next door where a huge white-brick high-rise now stands. My parents called it a vacant lot, but to me it seemed quite the opposite. To me it seemed very, very full. Full of trees for sure, but also fallen branches covered in lichen, moss in the shady spots, mud in the open spots, little fleshy plants among the fallen leaves that flowered in the spring, and tall, grassy weeds along the sunny edge that flowered in the fall. To this day, when I hear some phrase that generically refers to forest (“If a tree falls...” and “Whose woods these are...” come to mind), those are the woods I see in my mind’s eye.

My parents avoided those woods, and like a page out of Grimm’s Fairy Tales, told me to do the same. Oneness with Nature is not their strong suit. I don’t know what they were so afraid of—a Big Bad Wolf, a Lindburgh-baby kidnapper, or just muddy shoes. But whatever it was, it didn’t work on me.

I’d sneak away from our building’s playground, past the back entrance to the garage to where Independence Avenue dead-ended and the trees began. For a moment I’d stare in from the outside, like a wary animal, until my curiosity overcame my trepidation and whatever I’d internalized of my parents’ warnings. I’d look around to make sure no one was there to see me or stop me, then step onto the little path away from the sidewalk and into the underbrush, and be in the sanctuary of the shade. The only thing to fear was the mishegas I’d have to endure if I didn’t get back to the playground before someone noticed I was gone. But back then—we’re talking the mid-1960s—no one really noticed. We kids just sort of got turned

loose in the playground and left to, you know, play. Once the grown-ups were gone, I could head for the woods....

And then, when I was six, we moved to a ranch house on a cul-de-sac in suburban Atlanta. All the houses on our side of the street backed up to a way bigger, wilder, and more authentic-seeming forest than the one on which I’d cut my explorer’s teeth in the Bronx. Plus, whereas my city forest had been pretty much flat, my suburban forest was rolling with hills. Atlanta is at the edge of the Appalachian foothills, and in fact, has the highest elevation of any major U.S. city east of the Mississippi. So the woods were not just hilly, but in some places almost mountain-steep.

Clambering up and down the topography only added to my sense of adventure. Every walk was an expedition. And best of all, there was a creek that cut through all this, pouring over a twenty-five-foot waterfall about a ten minute slog upstream from our street. A creek where I’d see a dozen different textures of water as it moved from sun to shade, from shallow to deep, from center to edge, from noon to dusk. It would rush a muddy red after an afternoon thunderstorm and flow sparkling clear the next morning. Maybe I’d see water striders or streaks of pine pollen on a placid surface, minnows or tadpoles in a shadowy pool, frogs’ eggs or actual frogs by the pebbly shore. In winter, there would be a brittle shelf of ice where the water was slow and shallow, and big mounds of pine straw would collect on the outside curve of every bend. Come summer, those pine straw beds were where I’d sit in the cool shade on a long, hot, Georgia afternoon and lose myself in fantasy, off with Herbert Axelrod on the Rio Negro or with Neil Armstrong on the Moon.

Truth is, I never really knew just what I was going to see there. There were new discoveries every single time. And by then, my parents' ongoing warnings about the woods had devolved into a completely predictable and ignorable routine. The mishegas on my muddy return, inevitably bearing something wet or wriggling or both, was almost part of the fun. Yeah, yeah, yeah, shoes off, then right into the bath. Whatever.

And so even as a kid I was a wanderer, and I remain a wanderer. My three main hobbies—fish, plants, and food—were all deeply rooted obsessions by the time I was nine. And they were a form of wandering too, a way for me to travel the world: to Kazakhstan via a springtime bed of *Tulip gregii*, to the Byelorussian Pale via a taste of sweet-and-sour stuffed cabbage, or to Sumatra via a tangle of Kuhli Loaches.

Although I have traveled quite a bit, the world is way bigger than my budget and my available vacation days. I have never been to any of those places, not physically. But I'm whisked across the universe daily by my hobbies.

Among my eight aquariums, one in particular has that transportive power. I call it my Borneo Tank, but that's a misnomer. It's really more Borneo-ish. It's only ten gallons, contains a stack of Malaysian driftwood, a little clay flowerpot on its side, and is otherwise pretty much completely filled by a dense forest of Bacopa with an understory of Java Moss. Both plants happen to be native to Southeast Asia, including Borneo. In addition to all those plants, the tank sits sideways (narrow side facing out) near the floor on the bottom shelf of the stand holding my 75-gallon display tank, making the viewing angle pretty awkward. In fact, between all that green stuff and the funny angle, I'm not exactly sure what fish are actually in there. But that's not a problem—in fact that's the allure.

Not seeing everything that's living in the tank, and not knowing what I'm going to see each time is a lot like an expedition up my Georgia creek. In nature, small creatures

often survive by darting in and out of sight—by not being seen. If I were to look under the surface of a blackwater swamp in Borneo (or in Thailand, as Rodrigo Silva does on his super-cool YouTube channel), I would not immediately see everything that's there. I'd have to be patient—wait a while. Or come back the next day. Or the next week. Or after the rainy season. And so it is with the Borneo-ish tank.

In the morning I might spot a little group of Celestial Pearl Danios (*Celestichthys margaritatus*), Myanmar and Thailand natives, convening between the wall of Bacopa and the front glass. They are the most outgoing fish in the tank, and the ones I see most often. In the evening maybe there'll be a small school of Chili Rasboras (*Boraras brigittae*) from western Borneo in the same spot. Feeding my fish frozen bloodworms is my best shot at seeing the two types of chocolate gouramis that live within the tropical tangle, *Sphaerichthys osphromenoides* faring from Peninsular Malaysia, Sumatra, and Borneo, and *Sphaerichthys vaillanti*, found only from a single river drainage in southwestern Borneo. And found, remarkably in both cases, at the Union Square Petco. Go figure.

The shyest inhabitants are a group of Scarlet Badis, *Dario dario*, which are native to the Brahmaputra drainage of far eastern India, adjacent to Myanmar and Bangladesh. Just when I think they must have died unnoticed, one of these tiny charmers darts out of the underbrush to carefully study some passing tidbit before nabbing it and dashing back into the thicket. I love the contrast between their boss attitude and their tiny size. In a way, their watchful deliberation in emerging from the Bacopa forest reminds me of my own as I'd head into my Bronx forest. I apparently still have a pair of Sparkling Gouramis (*Trichopsis pumila*) in there too. After months of not seeing them at all, nor their minuscule fry, the male appeared two weeks ago on bloodworm day, the female the day after. Each time I look into the tank, all that green looks pretty much the same,

but I never know which fish will make an appearance.

And just to make things even more like the actual state of nature these days, this not-quite-sympatric community also includes a patently invasive species. It was introduced by a well-meaning human, namely me, to scavenge any food that falls to the bottom: Gold Laser Corydoras, or CW010 in Coryspeak. I put six youngsters in there a few years ago, the first time I laid eyes on these beauties at Monster Aquarium. They mostly hang out at the back of the tank, on a patch of open gravel by the sponge filter, but occasionally rummage their way along the Java Moss to the front glass where I can actually see them. So, yeah, there are all kinds of cool fish in the Borneo-ish tank.

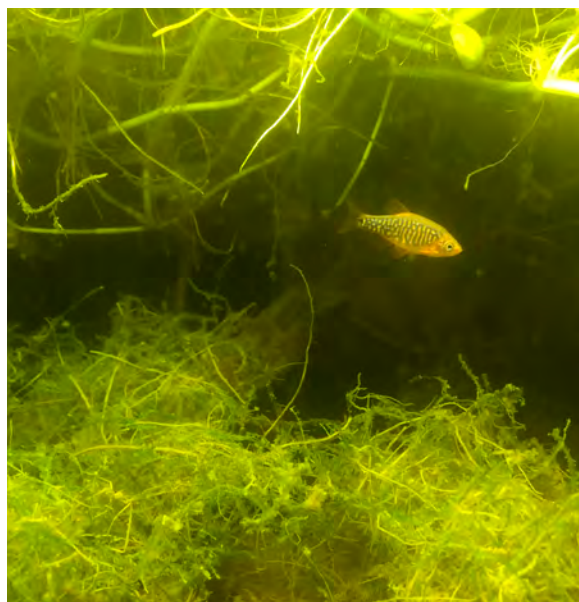
You can probably tell that this is not a display tank in the traditional sense that seeks to keep all the fish as visible as possible. Nor is it a biotope tank in the strictest sense, although all the fish enjoy similar water conditions and are from the same general part of the world (except that one invasive...). But there are fish living together in there that would never meet in the wild, so it's not a totally accurate slice of Nature. Hence the "-ish". But for me this tank is still an accurate microcosm, just in a different way.

In my actual travels as an adult, I've continued what I started in those Bronx woods and that Georgia creek. I've spotted orangutans and sea turtles and swiftlets in Borneo, red birds-of-paradise and wobegong sharks in The Coral Triangle, the Big 5 in Kenya, whales in three different oceans, grizzlies in Alaska, caribou in Oregon, octopuses in the Red Sea, and hummingbirds on the Blue Ridge and in Jamaica (the Caribbean island, though there are hummers in Queens too) and even right here in Central Park. I've likewise done my share of botanizing near and far and scuba-dived my way around the planet. And you know what? Nature isn't a display aquarium either. While some creatures are either so bold or so numerous or so apex that they can't be missed, for most of the rest, discretion is the better part of surviving another day. They appear when the coast is clear or when there's a food or territory or reproduction opportunity or lots of conspecific company to spread the risk. They appear out of the forest or the reeds or the grass or the coral, or just seemingly out of the blue. Or between the Bacopa and the front glass.

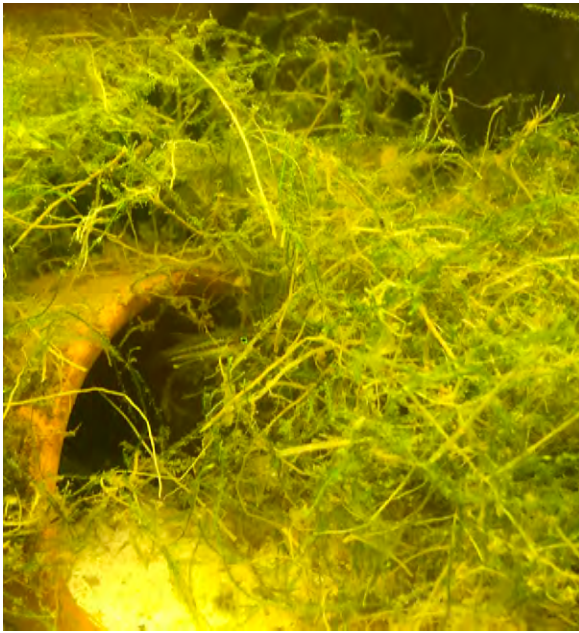
One of the great pleasures of the aquarium hobby is talking shop. We share tips, how-to's, data, best practices, equipment recommendations, successes and failures. I



Celestial Pearl Danio (female)



Celestial Pearl Danio (male)



Sparkling Gourami (male)



Sparkling Gourami (female)

love that shop talk. I do the same with my gardening friends and my foodie friends and friends down all my other rabbit holes. But in our case, in our aquarium hobby, we're not collecting inanimate objects or tracking sports stats or comparing the 2000-plus versions of "Yesterday". No, the core of our hobby is keeping non-domesticated creatures in captivity. Whatever the advantages and disadvantages of this set-up for the animals themselves, the fact is that they have a very different life in our aquaria than they did or would in the wild.

Among the many things I find fascinating about keeping fish is watching their natural behaviors: the way they swim, the way they eat, the way they interact, the way they reproduce. And to get a better view of what their lives might be like in the wild, to view their natural rhythms and behaviors, I want to provide them with a captivity that as closely as possible approximates their native homes. And do once again note, their wild homes are not set up to make it easy for us humans to find them. Quite the opposite. Not only are we frighteningly enormous compared to them, but let's face it, we're apex predators. In Nature, they seriously want zero to do with the likes of us. So to see them better, I need to see them less.

I have seven other tanks set up so I can always see the fish. Set up so they're easy to feed and clean and maintain. Yes, I'm providing the fish with their needs, but I'm also asserting my apex status, placing a priority on my interest and my convenience. When friends or family come over, they are immediately drawn to those seven aquariums. They might even ask a few questions. Often, after their curiosity is satisfied—it usually doesn't take long—someone might notice that little tank down by the floor. "Is that one empty?" "Oh no, it's actually very, very full...."

By playing down the human element in my Borneo-ish Tank, I'm creating a different sort of microcosm. It allows me to not only better approximate a Southeast Asian biotope for my fishes' sake, but also better approximate the experience I would have if I went looking for them in their Southeast Asian homes. I know there are all kinds of fascinating fish living in there, but I'm just going to have to wait for them to reveal themselves on their own terms, to see which denizens' curiosity or hunger or need is great enough to overcome their trepidation, and for all I know, the warnings from their parents.



FISHES ON THE WEB

THE ANGLERFISH

Deep-sea marvels

How anglerfish defy evolutionary expectations



A groundbreaking study sheds light on the extraordinary evolution of anglerfish, a group of deep-sea dwellers whose bizarre adaptations have captivated scientists and the public alike. The research uncovers how these enigmatic creatures defied the odds to diversify in the harsh, resource-poor environment of the bathypelagic zone — part of the open ocean that extends from 3,300 to 13,000 feet below the ocean's surface.

Photo from Wikipedia



https://www.sciencedaily.com/releases/2024/12/241202221811.htm?utm_source=substack&utm_medium=email



Aquarium Keeping History

by Zenin Skomorowski

The following is based on an article I wrote in 2012:

Back in the late 1960's when I first got into the fish keeping hobby, everyone I knew had the same reference book. It was a surprisingly heavy hard cover book that was less than 1 1/2 inches thick. The dark green cover had 3 Rasboras in gold leaf. The spine had a piece of paper glued to it that identified it as **Exotic Aquarium Fishes** by Wm. T. Innes. Also on that label was a green line drawing that reminded me of a bat, but years later, I realized it was a head-on view of a Hatchet tetra.



This particular book is the 13th edition, published in July of 1951.

William Thornton Innes inherited his family printing company in Philadelphia in the early 1900's. He had also started to learn about cameras and photography, and intended to use this new technology in his books. The first book in which he did so was **Goldfish Varieties** in 1917, with 15 editions until 1935. Later in 1935, the first edition of **Exotic Aquarium Fishes** was published and went through 19 editions until 1966. Most of the photos in the books are in black and white. Color film was available, but required so much light to expose that Innes

thought the colors on the fish were washed out and did not represent them correctly. Thus many photos were hand painted, then test printed and examined for accuracy, then if needed, retouched again before finalizing for publication. Over the years, more hand painted photos appeared in subsequent editions, but many remained in the original black and white.

Newly introduced species to the hobby were added over the years. This work was researched by a colleague, Dr. George S. Myers. It was Dr. Myers who named the Neon Tetra in honor of Innes as *Hyphessobrycon innesi*, later moved (renamed) to *Paracheirodon innesi*.



Now, let me describe more of the contents of this book, to see why it was frequently referred to by millions of tropical fish hobbyists. Inside the front cover of the book is a map titled World Map (Western) for the Location of Fishes. It sits on a reference grid system with lower and upper case letters along the verticals and numbers from 1 to 82 along the horizontals. This grid system is referenced in the description of each fish to show where that species was collected. This map shows North, Central and South America, along with Africa. On the inside of the back cover is World Map (Eastern) for the Location of Fishes, that covers south east

This article originally appeared in the February, 2025 issue of the Kitchener-Waterloo A.S. Fins & Tales

Asia, Australia and the islands in between. It has a similar grid reference system.

Interesting is the name of many countries in Africa that reflected their European conquerors that have now been replaced by independent names. Countries such as Anglo-Egyptian Sudan, Italian Somaliland, French West Africa, Belgian Congo and French Equatorial Africa have long been replaced. Most lakes and rivers have the same names as now, but Lake Malawi was known as Lake Nyasa. In South America, British/Dutch/French Guiana are no longer used. In south east Asia, Baluchistan, Burma, Siam and French Indo-China are no more.

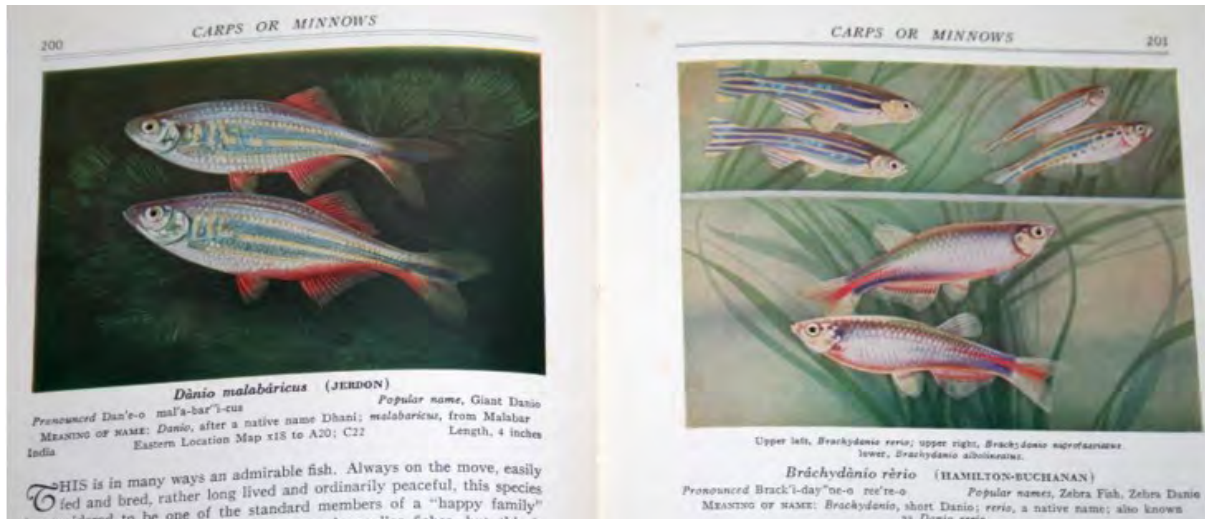


Just in front of the title page of the book declaring **Exotic Aquarium Fishes** to be “A Work of General Reference,” is a heavy black page with a separately printed, hand colored image of two Rasboras with some plants in the background. This shows the additional special care taken in producing this book. The next few pages contain a bit of the history

and evolution of this book. Also is a page of “Appreciations” to contributors to the book. Over the next 100 pages, there is a treasure of information regarding Aquarium Principles, Foods, Enemies, Diseases, General Aquarium Management, Plants and Planting. Classifications of fishes and pronunciation of names is also discussed. Over the next 200 pages are the fish profiles with their photo, usually a pair. I found it quite enjoyable to read the descriptions, to see some of the changes in fish knowledge since then, and even the English prose is different than today.

While scanning the fish profiles, many familiar fish still available today are there, although many have been reclassified and/or renamed. In some families, like cichlids, there are mostly Central American, South American and West African fish. There are no fish from the Rift Lakes of East Africa; they would come to North America in the 1970's. One of my favorite families of fish is the Loaches. In this book there are four species. The kuhli, two weather loaches and the clown loach. Today there are at least 150 species on loaches.com and 20 or so are widely available at retailers. There are a fair number of corys, but only one sucker-mouth catfish, no “L-” numbers here. A wide variety of killifish were available, but they were known as Egg-Laying Tooth-Carps. Some of the Live-Bearing Tooth-Carps are now more widely known as Goodeids. Anabantids, like gouramis and bettas, were very popular, as



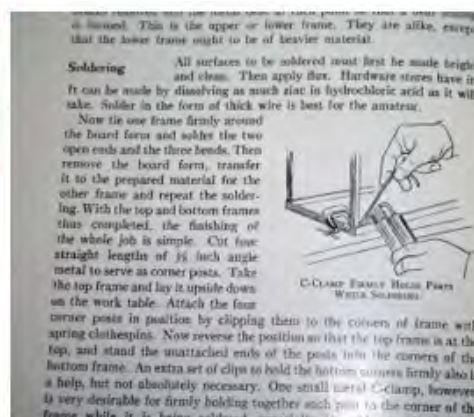


were barbs and other cyprinids. Livebearers are well represented, with most species still popular in the hobby today. Dwarf cichlids were represented by only 4 species from South America. There was a good section on keeping and breeding Sticklebacks, a native North American Fish.

There were only two rainbowfish species listed from Australia, but they were called silversides. There are some brackish and even marine species shown.

In the back of the book, there are several interesting sections, such as hybrids and hybridizing, sex changes in fishes, marine aquariums, community tank combinations, and easiest fishes for beginners. There is a section I would call "How Do the Fish Get to You?" It discusses wholesale breeding, collecting in the native habitat, transporting exotic aquarium fishes, and aquarium societies. There is a reference section on building your own aquarium, where you have to brush up on your metal cutting and soldering, glass cutting and knowledge of aquarium cements.

This book has a lot more gems in it, and you can spend hours randomly opening this book and getting a Blast From the Past!



Pictures From Our Last Meeting

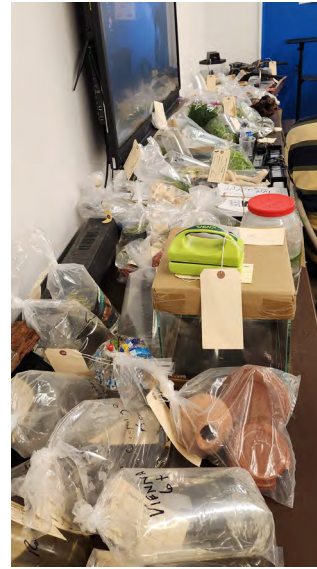
Photos by Jason Kerner (below) and Marsha Radebaugh (facing page)



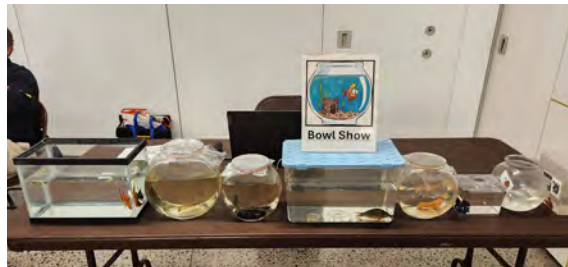
Dan and Marsha Radebaugh prepare to check in members and visitors



Above and at right: Some of the items for our auction



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An Aquarist's Journey

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GCAS Happenings

April

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March's Bowl Show Winners:

1ST PLACE	MARK SOBERMAN - CORYDORAS BROCHIS
2ND PLACE	HARRY FAUSTMANN - REDTAIL PARADISE FISH
3RD PLACE	JOSEPH FERDENZI - BLUE GULARIS

UNOFFICIAL 2025 BOWL SHOW TOTALS TO DATE:

MARK SOBERMAN	3	HARRY FAUSTMANN	2	JOSEPH FERDENZI	1
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Here are some aquarium societies in the Metropolitan New York area:

GREATER CITY AQUARIUM SOCIETY

Next Meeting: May 7, 2025

Speaker Subject: Natural Aquariums, Part 2

GCAS Usually Meets the first Wednesday of the month
 at 7:30pm, at the Alley Pond Environmental Center
 22465 76th Ave, Oakland Gardens, NY 11364

Contact: Joseph Ferdenzi (516) 484-0944

E-mail: GCAS@Earthlink.net

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

BROOKLYN AQUARIUM SOCIETY

Meets the 2nd Friday of the month (except July and
 August) at 7:30pm: New York Aquarium - Education Hall,
 Brooklyn, NY 11229

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

Website: <http://www.brooklyn-aquarium-society.org>

LONG ISLAND AQUARIUM SOCIETY

Meets: 2nd Fridays (except July and August) 8:00pm.

Meetings are held at AMVETS Post 48, 660 Hawkins
 Avenue, Ronkoncoma, NY 11779

Website: <https://ncasweb.thechinesequest.com/>

NASSAU COUNTY AQUARIUM SOCIETY

Meets: 2nd Tuesday of the month (except July and August)
 at 7:30 PM. Meetings are held at:

Molloy University - 1000 Hempstead Ave, Rockville
 Center, NY, Barbara H. Hagan Center for Nursing, Room
 239

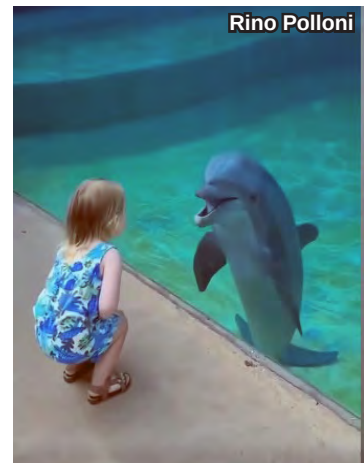
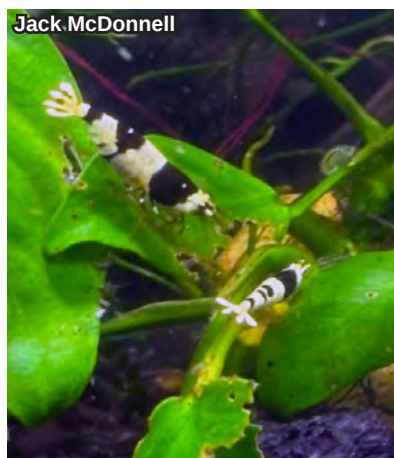
Contact: Mike Foran (516) 798-6766

Website: <https://www.nassaucountyaquariumsociety.org/>

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!



Don't Get Any Ideas, Gentlemen!

A series by the Undergravel Reporter

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.

If you thought your love life was difficult, wait until you hear about the blue-lined octopus.

Researchers in **Current Biology** described the unique mating ritual of the blue-lined octopus (*Hapalochlaena fasciata*), a six-inch cephalopod found off the coast of Australia. This highly venomous octopus has salivary glands full of symbiotic bacteria, which produce a deadly poison called tetrodotoxin. In humans, tetrodotoxin can cause muscle paralysis, dizziness, vomiting, difficulty breathing and, sometimes, death.

The blue-lined octopus was known to immobilize prey by injecting it with venom. But apparently that is not the octopus' only use of its venom. Researchers have observed the male octopuses will inject female octopuses with venom during the mating process.



Don't get any ideas, gentlemen. Female blue-lined octopuses are almost twice the size of the males, and will typically eat the male octopus after mating in order to store additional energy to lay the eggs and watch over the young. Researchers studying the octopuses' mating ritual in a laboratory setting observed males injecting the females with venom into the aorta (located on the back of the head). While the venom does not kill the female octopus, it does immobilize them after a few minutes. The males would then mount the females and copulate with them for 40 and 75 minutes, until the females began to recover and pushed the males off.

If this all sounds like a dangerous dance, that's because it is. The researchers noted that the males need to inject the right amount of venom in the females in order to immobilize them without killing them. At the same time, if the male misses the aorta, it can have devastating consequences. In one instance, the male did not actually bite the aorta, and the female woke up early.

It is not unheard of for larger females of certain species to eat their male mate after copulation—praying mantises, black widow spiders, and green anacondas are a few of the species known to practice this behavior. Other species of octopus have been observed to have much longer arms relative to their body, which is believed to help the males practice “safe” sex. The blue-lined octopus is the first species, however, where the male has been observed to use its venom to ward off such unwanted post-coital behavior.

Researchers also viewed MRIs of the octopuses and found that male blue-lined octopuses had larger venom glands despite their overall smaller size. This size difference is likely due to the males' reproductive defense-mechanism. Researcher Chuan-Chin Chiao, an ecologist at National Tsing Hua University in Taiwan, who was not involved with the research, described the creative defense mechanism as “a great example of a co-evolutionary arms race between sexes, where a cannibalizing large female is counteracted using venom in males.”



Sources:

[https://www.cell.com/current-biology/abstract/S0960-9822\(25\)00057-0](https://www.cell.com/current-biology/abstract/S0960-9822(25)00057-0)

<https://www.smithsonianmag.com/smart-news/these-male-octopuses-use-venom-to-subdue-female-mates-and-avoid-being-eaten-after-sex-180986208/>

Photo from Wikipedia

From The Pages of Yesteryear

The Aquarium magazine November 1962

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Q: What if there was a source right in your home, available 24/7/365, that could provide the information you want and need about Koi keeping? Wouldn't that be nice, not to mention convenient?

A: Good News! There is just such a source and it's only a click away on your own computer. Water Quality course suitable for ALL fish keepers! Learn something new today!

Current. Accurate. Useful.

www.KoiOrganisationInternational.org



