

modern AQUARIUM



April 2024
volume XXXI
number 2

Greater City Aquarium Society - New York

長江水族館

專營各國熱帶觀賞魚和全套優質水族器材



131-08 40th Road, Flushing

Skyview Mall 天景豪苑旁

347.732.0373

monsteraquarium@hotmail.com



歡迎參觀 七天營業

Open 7 Days • 10am-8pm



LIKE AND FOLLOW US ON FACEBOOK

WWW.FACEBOOK.COM/MONSTERAQUARIUMINC

modern AQUARIUM

Series III Vol. XXXI, No. 2 April, 2024

ON THE COVER

Our cover photo this month features, from our Facebook Fishy Friends' Photos page, a Short Fin Blue Eyed Lemon Bristle Nose Pleco (*Ancistrus* sp. "L144"). Photo from Vinnie Richie.

GREATER CITY AQUARIUM SOCIETY

BOARD MEMBERS

President.....Horst Gerber
Vice-President.....Edward Vukich
Treasurer.....Leonard Ramroop
Corresponding Secretary.....Open
Secretary.....Open
President Emeritus.....Joseph Ferdenzi

MEMBERS AT LARGE

Pete D'Orio.....Al Grusell
Jason Kerner.....Dan Radebaugh
Marsha Radebaugh

COMMITTEE CHAIRS

Bowl Show.....Bill Amely
Breeder Awards.....Harry Faustmann
Early Arrivals.....Al Grusell
Membership.....Marsha Radebaugh
N.E.C. Delegate.....Joseph Ferdenzi
Programs.....Open
Social Media.....Dan Radebaugh
Technical Coordinator.....Jason Kerner

MODERN AQUARIUM

Editor in Chief.....Dan Radebaugh

Copy Editors:

Donna Sosna Sica.....Thomas Warns

Advertising Manager.....Robert Kolsky

See Us On the



In This Issue

From The Editor.....	2
G.C.A.S. 2024 Program Schedule.....	3
President's Message.....	4
Our Generous Sponsors and Advertisers.....	5
Fishy Friends' Photos.....	6
March's Cartoon Caption Winner.....	7
Cartoon Caption Contest..... by Denver Lettman	8
Pinkie Zero: A Fish Story..... by Stephen Sica	9
Stunning, New to Science Fairy Wrasse..... from the California Academy of Science	10
Bowl Show Rules.....	12
The Blue Panda Apisto..... by Charles Harrison	13
WTFISH?: Aquarium Superstitions..... and Cultural Beliefs by Derek P.S. Tustin	15
A Life With Fish..... Flying Solo by Jason Gold	20
G.C.A.S. Classifieds.....	23
G.C.A.S. Member Discounts.....	24
Pictures From Our Last Meeting..... Photos by Jason Kerner	26
March Bowl Show Results.....	26
The Undergravel Reporter..... Fish As Cognitive Bubbles?	27
From The Pages Of Yesteryear..... Tropical Fish Hobbyist December 1987 from Joseph Ferdenzi	28

From the Editor

by Dan Radebaugh

Well, it was certainly wonderful to see such a big crowd at last month's meeting! The new meeting format seemed to work out well, and we transitioned pretty smoothly from the large auction to the rather more sedate tone of our Speaker's presentation. It was new, to be sure, but once we were under way everyone seemed fine.

I think you'll find much to like in this issue of **Modern Aquarium**. There are some very nice photos from our GCAS Fishy Friends Facebook page, followed by this month's Cartoon Caption winner and then by the new Caption Contest for this month. Remember, you can't win it unless you're in it! Put on your thinking caps!

I think we did pretty well on articles for this month! Steve Sica leads off with his "Pinkie Zero, A Fish Story," which I liked a lot. This is followed by the announcement of a new species of Fairy Wrasse discovered in the Maldives—the first ever fish described by a Maldivian scientist! Mazel Tov, Maldives!

This is followed by a couple of exchange articles—"The Blue Panda Apisto" by Charles Harrison, and "WTFish?: Aquarium Superstitions and Cultural Belief" by Derek P.S. Tustin, whom some of you will likely recall from other exchange articles (Indeed, this is an encore presentation for this article, which first appeared in **Modern Aquarium** back in 2013.

Jason Gold checks in with another installment of his "A Life With Fish" series which has been so well received by our readers. This one is subtitled "Flying Solo."

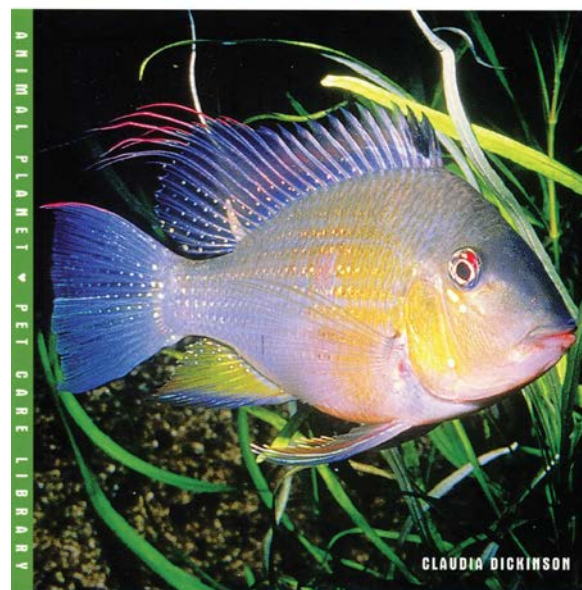


You'll find Pictures From Our Last Meeting on page 26, The Undergravel Reporter on page 27 ("Fish As Cognitive Bubbles?"), and on page 28 the first installment of a new series from Joseph Ferdenzi, entitled "From the Pages of Yesteryear!"

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 Programs

2024

March 6	Emperor Tetras
April 3	Inside Filters
May 1	Live Food Culture
June 5	Swordtails
July 3	TBA
August 7	Night At The Auction
September 4	TBA
October 2	TBA
November 6	TBA
December 4	Holiday Awards 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 (347) 379-4984. Copyright 2023 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 (one copy if sent electronically). 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 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 Horst Gerber

Well, it looks like it's going to be another exciting year for Greater City and for **Modern Aquarium!** We had a really terrific turnout for our March meeting—practically back to pre-pandemic levels, as well as a very large auction. Everyone seemed happy to be back—I know I was! A big thank-you goes to our dedicated Board members, as well as to our regular members who continue to make this club relevant today after now more than 100 years of continuous service to the fishkeeping community of the New York City area!

All this doesn't just happen by accident! It takes people who are willing to do a little bit extra to keep this club relevant and a joy to belong to! If you feel you'd be willing to help out in some way, please talk to me or to one of our esteemed Board members. We'd love to have your help!

I'm considering naming 2024 "The Year of the Lantern Fly!" I've recently squished quite a few of these invasive pests from Asia. Too bad they don't make great fish food. Meantime, best wishes for a happy and prosperous 2024!

On the facing page (5), you can see a list of our sponsors, without whom we could not do all the things that we do to make this club what it is. In addition to these wonderful sponsors, we would like to particularly call out ZooMed and PennPlax for the extra generous donations they recently sent us!



Horst





GCAS Thanks You!

Our Generous Sponsors and Advertisers

The Greater City Aquarium Society extends our heartfelt thanks to the following manufacturers for their generous donations. Thanks also to our advertisers, whose contributions to our success as a Society are deeply appreciated. Please patronize our supporters.

Advanced Marine Aquatics

Al's Aquatic Services, Inc.

Amazonas Magazine

Aquarium Pharmaceuticals

Aquarium Technology Inc.

Aqueon

Brine Shrimp Direct

Carib Sea

Cobalt Aquatics

Coralife

Ecological Laboratories

Fishworld

Florida Aquatic Nurseries

Franklin Pet Center Inc

Fritz Aquatics

HBH Pet Products

High Quality Exotic Goldfish

Hydor USA

Jehmco

Jungle Bob Enterprises

Jungle Labs

Kent Marine

KHC Aquarium

Kissena Aquarium

Marineland

Microbe Lift

ModernAquarium.com

Monster Aquarium, Inc.

Nature's Reef & Reptile

NorthFin Premium Fish Food

Ocean Nutrition America

Oceanic

Omega Sea

Pacific Aquarium, Inc.

Penn Plax

Pets Warehouse

Pet Resources

Pisces Pro

Red Sea

Rena

Rolf C. Hagen

San Francisco Bay Brand

Seachem

Sera

Spectrum Brands

Your Fish Stuff.com

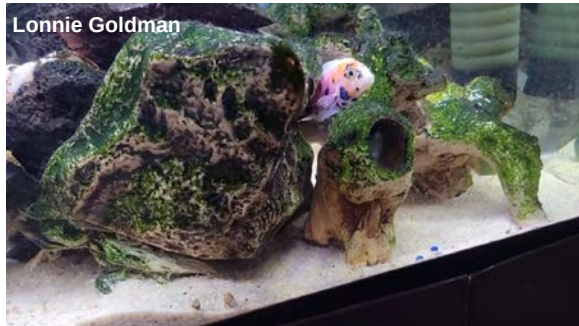
Zilla

Zoo Med Laboratories Inc.

Fishy Friends' Photos

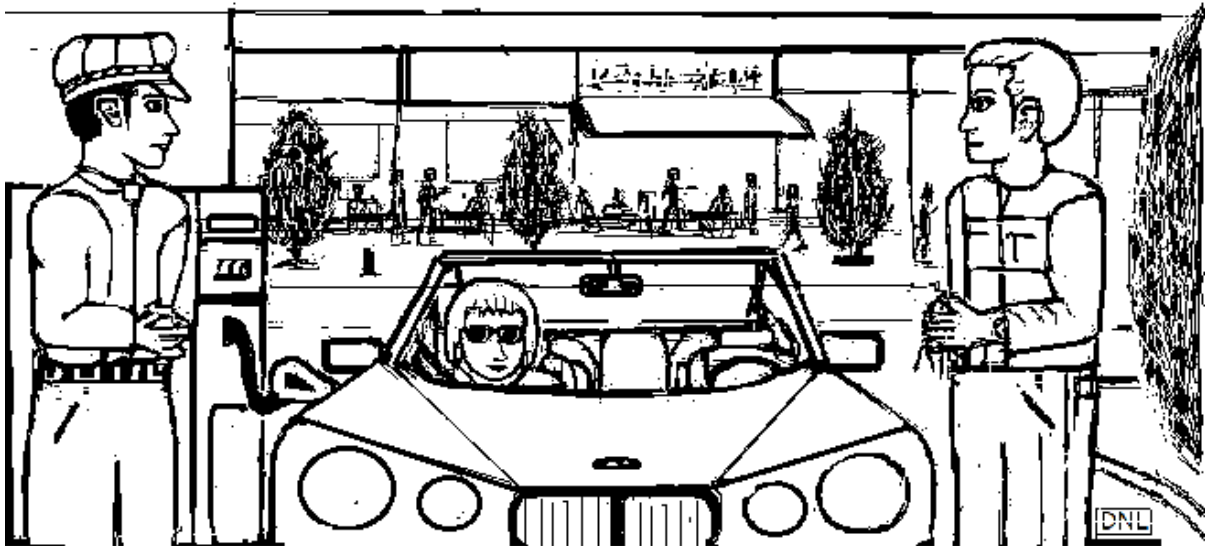
by Greater City Aquarium Society Fishy Friends

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!





March's Caption Winner:

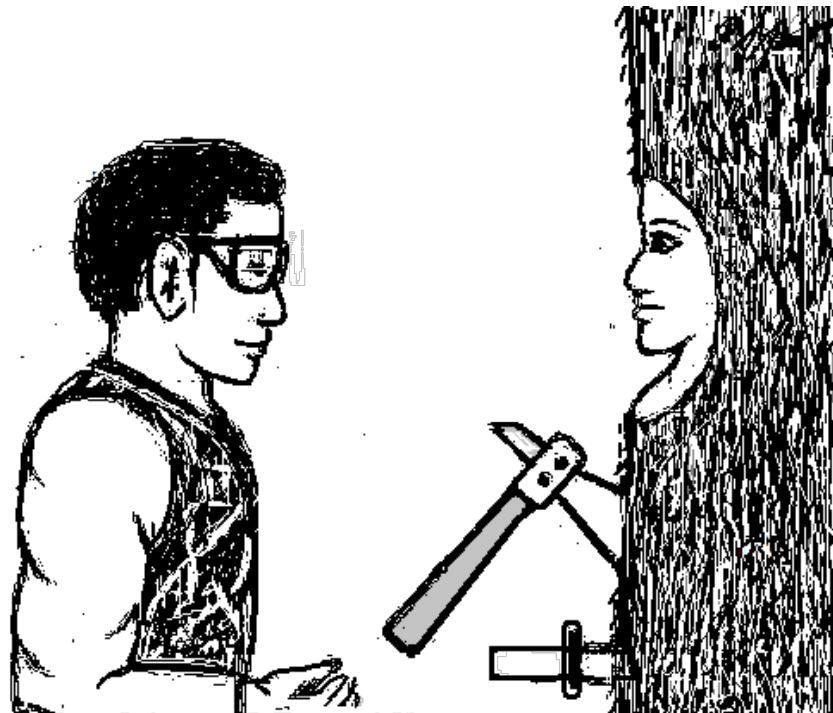


The Modern Aquarium Cartoon Caption Contest

by Denver Lettman

*In this contest, 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 may turn in to Marsha or Dan 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!*

DNL



Your Caption:

Your Name:



<https://www.amazonasmagazine.com/>

PINKIE ZERO: A FISH STORY

Story and Photos by Stephen Sica

Near the fork of Long Island about sixty miles from Queens sits the town of Riverhead. On the north side of the main business road, Route 58, is a Shoprite supermarket. Next door is the Riverhead Petco. Donna enjoys cooking. While she's in Shoprite, I try to persuade Cordelia that we should look around in Petco. Usually we just stand around in the seasonal cold or warmth of Shoprite's entrance while Donna shops, because Cordelia wants to be with both of us all the time. I do not have to discuss this any further, if you are a dog owner. Since Cordelia was certified as a medical service dog last year, we now just take her into the store.

After one morning of grocery shopping in early February, we all went into Petco. Donna and I found this tiny female betta for sale for \$2.99, so I purchased it. Its primary color was beige with a hint of red on its fins. A day later we returned to our Queens house where I acclimated the tiny fish to its own home in a 5.5 gallon aquarium. Donna named the fish Pinkie, and it seemed happy to be out of its small plastic container and into its new home. On the morning of the fourth day I went down to the basement to check on my fish. Poor Pinkie was deceased. I told Donna, who was very saddened by this event.

Later that day, or maybe the next, I told Donna that I currently have a very similar fish in another 5.5 gallon aquarium. She asked when and where I got it. I told her that I purchased the fish in either Petco or PetSmart as a baby in February 2023 so it was already more than one year old. I don't give names to any of my fish, but I told Donna that this fish had a difficult early life due to my stupidity. For no particular reason at this time, I decided to call the betta Pinkie Zero, since this fish had a home in our basement prior to little Pinkie.

Pinkie Zero is a very small adult female *Betta splendens*. It has very small fins and tail

and usually wiggles its body to help swim to the surface of its home. I try to keep the water level an inch or two lower, so the fish does not have a difficult swim to the surface. A 5.5 gallon tank is

10.5 inches high. Maybe Pinkie Zero is a runt betta, but I don't know for sure.

Anyway, on the Saturday morning that I purchased the betta, Donna, Cordelia and I attended the Camellia Festival at the Planting Fields Arboretum in Oyster Bay. Afterwards I drove to a Petco in Plainview to purchase a specific item,

and bought the betta as an afterthought. When we arrived home, Donna began preparing lunch and I was tending to the betta and my other aquariums in the basement when Donna hollered down that lunch was ready.

Before I could properly acclimate the betta, I foolishly put it in a fifteen gallon tank with eight Buenos Aries tetras. By the time I finished lunch, I had completely forgotten about the betta! An hour or two later I remembered and hurried to the basement to rescue the little fish. It was hiding on the bottom. I scooped it up to discover that it had no fins or tail. I put it in a smaller tank thinking that I had killed—more like murdered—the little fish. The fish survived. Its fins and tail eventually grew back but the fish was small and so were its new fins and tail! I currently have five bettas. Needless to say, Pinkie Zero is my favorite one. She's just so cute!



Stunning New-to-Science fairy wrasse is first-ever fish described by a Maldivian scientist!

California Academy of Sciences

The Rose-Veiled Fairy Wrasse, a stunning new addition to the tree of life, is the first-ever Maldivian fish to be described by a local scientist. Though there are hundreds of species of fish found off the coast of the Maldives, a mesmerizing new addition is the first-ever to be formally described -- the scientific process an organism goes through to be recognized as a new species -- by a Maldivian researcher. The new-to-science Rose-Veiled Fairy Wrasse (*Cirrhilabrus finifenmaa*), described today in the journal **ZooKeys**, file:///C:/Users/drago/Downloads/ZK_article_78139_en_1.pdf is also one of the first species to have its name derived from the local Dhivehi language, 'finifenmaa' meaning 'rose', a nod to both its pink hues and the island nation's national flower. Scientists from the California Academy of Sciences, the University of Sydney, the Maldives Marine Research Institute (MMRI), and the Field Museum collaborated on the discovery as part of the Academy's Hope for Reefs initiative aimed at better understanding and protecting coral reefs around the world.

"It has always been foreign scientists who have described species found in the Maldives without much involvement from local scientists, even those that are endemic to the Maldives," says study co-author and Maldives Marine Research Institute biologist Ahmed Najeeb. "This time it is different and getting to be part of something for the first time has been really exciting, especially having the opportunity to work alongside top ichthyologists on such an elegant and beautiful species."

First collected by researchers in the 1990s, *C. finifenmaa* was originally thought to be the adult version of a different species, *Cirrhilabrus rubrisquamis*, which had been



Figure 4. *Cirrhilabrus finifenmaa* sp. nov., underwater photograph from Rasdhoo Atoll, Maldives, 60 m. Photograph by LAR.

described based on a single juvenile specimen from the Chagos Archipelago, an island chain 1,000 kilometers (621 miles) south of the Maldives.

In this new study, however, the researchers took a more detailed look at both adults and juveniles of the multicolored marvel, measuring and counting various features, such as the color of adult males, the height of each spine supporting the fin on the fish's back and the number of scales found on various body regions. These data, along with genetic analyses, were then compared to the *C. rubrisquamis* specimen to confirm that *C. finifenmaa* is indeed a unique species.

Importantly, this revelation greatly reduces the known range of each wrasse, a crucial consideration when setting conservation priorities. "What we previously thought was one widespread species of fish, is actually two different species, each with a potentially much more restricted distribution," says lead author and University of Sydney doctoral student Yi-Kai Tea. "This exemplifies why describing new species, and taxonomy in general, is important for conservation and biodiversity management."

Despite only just being described, the researchers say that the Rose-Veiled Fairy Wrasse is already being exploited through the aquarium hobbyist trade.

"Though the species is quite abundant and therefore not currently at a high risk of overexploitation, it's still unsettling when a fish is already being commercialized before it even has a scientific name," says senior author and Academy Curator of Ichthyology Luiz Rocha, PhD, who co-directs the Hope for Reefs initiative. "It speaks to how much biodiversity there is still left to be described from coral reef ecosystems."

Last month, Hope for Reefs researchers continued their collaboration with the MMRI by conducting the first surveys of the Maldives' 'twilight zone' reefs -- the virtually unexplored coral ecosystems found between 50- to 150-meters (160- to 500-feet) beneath the ocean's surface -- where they found new records of *C. finifenmaa* along with at least eight potentially new-to-science species yet to be described.

For the researchers, this kind of international partnership is pivotal to best understand and ensure a regenerative future for the Maldives' coral reefs. "Nobody knows these waters better than the Maldivian people," Rocha says. "Our research is stronger when it's done in collaboration with local researchers and divers. I'm excited to continue our relationship with MMRI and the Ministry of Fisheries to learn about and protect the island nation's reefs together."

"Collaborating with organizations such as the Academy helps us build our local capacity to expand knowledge in this field. This is just the start and we are already working together on future projects," Najeeb says. "Our partnership will help us better understand the unexplored depths of our marine ecosystems and their inhabitants. The more we understand and the more compelling scientific evidence we can gather, the better we can protect them."



Journal Reference:

Yi-Kai Tea, Ahmed Najeeb, Joseph Rowlett, Luiz A. Rocha. ***Cirrhilabrus finifenmaa* (Teleostei, Labridae), a new species of fairy wrasse from the Maldives, with comments on the taxonomic identity of *C. rubrisquamis* and *C. wakanda*.** ZooKeys, 2022; 1088: 65 DOI: 10.3897/zookeys.1088.78139

Editor's Note: Below is another related site to visit:

Wrasses Dazzle: How Fairy Wrasses Got Their Flamboyant Colors

Mar. 1, 2021 — With their exuberant colors, fiery personalities and captivating courtship displays, the fairy wrasses are one of the most beloved coral reef fish. Despite this, the evolutionary history of its genus.





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

The Blue Panda Apisto

Charles Harrison
on
spawning *Apistogramma panduro*
in tap water

ARTICLE & PHOTOS

By Charles Harrison

AT THE SPRING 2023 MASI monthly meeting, we did a Rare Fish auction for our program instead of a speaker's program. There were dozens of bags, with some containing more than 4 to 6 young fish. The shipment came in late, and many had not been sorted. It was a little expensive for the club, but that was a plus for us members. I won the bid for a bag of these little cichlids, and there were about six fish in it. It was a little expensive, but there was only one bag of them, and I had not breed before. They looked like a challenge. I took them home.

Apistogramma panduro (A-183), sometimes known as *Apistogramma pandurini*, is a small cichlid from the Amazon river basin in Peru.

A. panduro is a close relative of *A. nijsseni*, with the two placed in the *A. nijsseni* species group. Common names for *A. panduro* include the Blue Panda Apisto, and Panduros' Apisto.

A is for *Apistogramma* The A-Numbers

A. panduro (A-183) is one of almost 100 described species in the genus *Apistogramma*. Like Loriids (with *L-numbers*) and Corydorids (with *C-numbers*), many Apisto species - named and potential - are assigned a number. There are currently 243 "A-numbers", from A-001 to A-243. Unfortunately, the system has not been updated since 2005, and there now may be as many as 500 (or more) Apisto species.

I set them up in a 10 gallon tank with new water, heavy with hornwort, bare bottom and a few small cut-off flowerpots for hiding places. There was plenty room for the seven juvenile cichlids, which they needed to mature and sex out.

Sources normally recommend water with soft, acidic pH and the addition of a peat softener. I use St. Louis tap water which is moderately hard from normal municipality water treatment. My water is aged for one to two days with Thiosulfate and aeration in a 50 gallon change water tank. The pH is about 8 after aging, with no change in hardness or other relevant parameters.



Sources often suggest that soft water and low pH are necessary to breed most Apistos. Charles bred *A. panduro* in hard water with a pH around 8.

They were fed Grindal worms, BBS, and small blackworms. I changed their water two weeks later and about ½ that / 2 weeks for about 6 weeks later. Two of the young seem to pair off and began guarding one of the cut-off pots two months after they were set up. They looked like two different genders, and they had the rest of the tank makes on the other side of the tank. I dipped the others out into another 10 gallon tank and watched for developments with the pair. In another two weeks, there were very small fry being hovered around by the female. Success! They spawned and were being good parents.

Like many Apistos, *A. panduro* will spawn and raise their fry in half-buried flowerpots.

About 6 months later, another pair emerged from the fry reserved in the initial separation. They were also given small, cut-off flowerpots as cover and produced another small litter of six to ten fry. They produce small, ruby red eggs in secluded, protected enclosures. The eggs hatch in 14 to 16 days. Fry take Microworms and newly hatched Brine Shrimp. They emerge from the enclosure in 12 to 16 days.

Charles Harrison is a Master Breeder, MASI Fellow, and nationally-renowned expert on the treatment of ornamental fish disease.

AT A GLANCE

Apistogramma panduro "The Blue Panda Apisto"

HABITAT

Origin:
Río Tahuayo
drainage, Peru

Biotope:
Blackwater
stream

STOCKING + HUSBANDRY

Size: M - 3 in.
F - 2 in.

Temperament:
Peaceful

Tank:
10+ gallons for a pair

Group:
Pairs or harems

Diet:
Omnivore

Breeding:
Egglayer

Lifespan: 3-5 yrs.

PARAMETERS

Temp:
74-80°F

pH:
5-8

dGH:
3-10

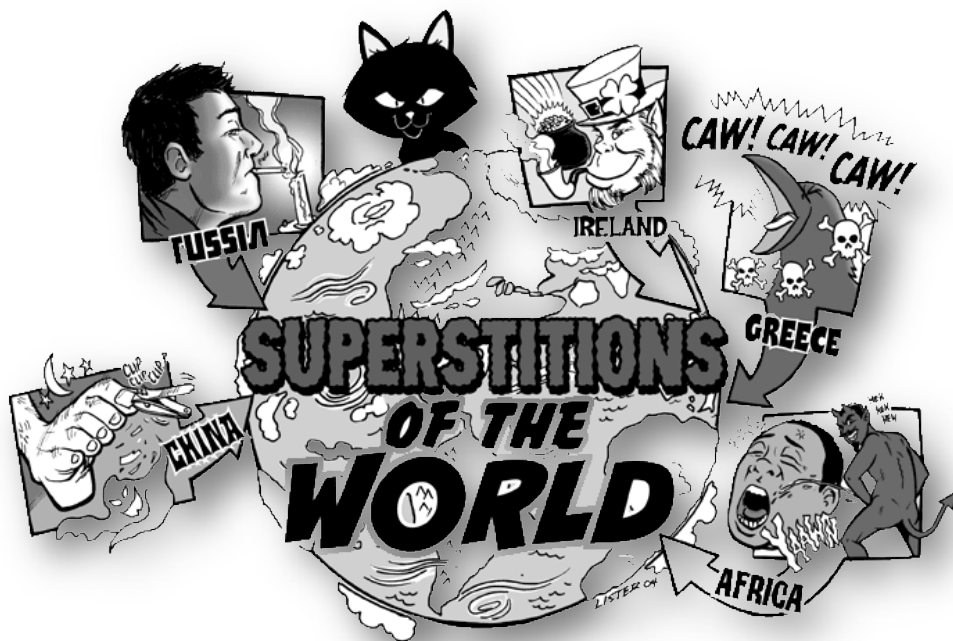
This article originally appeared in **The Darter**, the magazine of the Missouri Aquarium Society, Vol. 50 No. 1, Jan-Feb, 2024.



WTFish?: Aquarium Superstitions and Cultural Belief

by Derek P.S. Tustin

In researching my article from last month on *Loricariidae*, I came across a piece of information that, while I didn't include it in the article, really got me thinking. As I mentioned, the common name for most *Loricariidae* involves the name pleco. While the name is actually derived from *Hypostomus plecostomus*, it has been co-opted by the aquarium hobby to identify almost every species of *Loricariidae* in one form or another. But what interested me was that in many online sources, especially in online forums, the word "pleco" is typed as "pl*co".



I ignored it for the most part, but after I finished the article it was still nagging at me, so I went back and did a bit more research. What I found was that at one time a person had typed "pleco" when discussing one of their *Loricariidae*, only to have the fish die soon thereafter. From that experience arose the superstition that by typing "pleco" their fish would die. So people instead started to type "pl*co", and found that their fish lived!

As we all know plecos, especially wild-caught specimens, can be difficult to acclimate to new surroundings, so it is likely that the difficulties experienced were environmental rather than any true bad mojo. Still, this was one of the first superstitions I had seen relating to the aquarium hobby. I would guess that due to the exacting care that aquariums truly require, the majority of people take a scientific approach to aquarium care and don't consider any supernatural aspects affecting their fish.

But if one superstition is present, and as humans by and large are a superstitious lot, I figured there would be some others out there, so started looking around. I stumbled across a couple of different ones using the simple search terms "aquarium" and "superstition".

Superstition, by definition, is the belief in a supernatural causality, or the belief that one event or action can cause another without there ever being a direct physical process linking the two.

The first result of my basic search was the superstition that you shouldn't have an empty tank around as it is bad luck financially. Well, that one makes sense. After all, we all know that an empty tank is just begging to be filled. So the cost of substrate, decorations, plants, filtration, heater, lighting and fish adds up quickly and I can see where that would be a financial hardship. So maybe that one isn't really a superstition *per se*, but rather the reality that most aquarists face.

Another that I found was that you shouldn't put an aquarium in the bedroom as it results in a bad relationship for the couple who sleep there. My wife has told me that I'm not allowed to have a tank in our bedroom. I guess it would make her want to go to the bathroom more often in the middle of the night, so in my case, not having a tank in the bedroom leads to a better relationship with my wife. So again, probably not a superstition.

But that was about all I could find. At least until I started expanding my search and looking around.

It's true that there aren't that many aquarium related superstitions in either the North American or European aquatic communities. However, if we examine the Asian aquatic community, we find that not only are there many widely held beliefs that some might consider to be superstitions, but that those very same beliefs are the very underpinning of the entire hobby in that region of the world.

The concept of aquariums has been around for thousands of years. It is known that the Sumerians, a civilization in the region that is modern day Iraq, kept fish in ponds 4,500 years ago. It was believed that fish were trapped in artificial enclosures after monsoon floods would recede. So basically the Sumerians were taking advantage of yearly flooding to capture fish as a food source. But it was the Chinese, who were not only able to keep but breed carp 4,000 years ago, that really started the aquarium hobby.

Cultural Beliefs in the Asian Aquarium Community

It is impossible to provide a truly comprehensive look into why the Chinese were and are so enamored of keeping fish, but it is possible to give a quick overview.

The Chinese culture is one that is very spiritual, seeking to find a balance between the world and the person. Central to their belief is the concept of "Qi" (pronounced "chee" in English), which is the life force of a person. This life force can be either positive or negative, and can be influenced in one direction or the other based on their surroundings. One of the ways in which this influence can come about is through Feng Shui.

Feng Shui is a system through which a person can seek to achieve positive qi. There are five elements of Feng Shui; Wood, Fire, Metal, Earth and Water. It is believed that when all five elements are present and interact in harmony with each other, positive qi is achieved.

An aquarium is believed to be an excellent method to harmonize the five elements. Water is of course the element that is present in all aquariums. Earth is present in the aquarium through the presence of sand, gravel, stones and rocks. And Wood, in the form of aquatic plants and driftwood, is easily added.

But that leaves the elements of Metal and Fire. While Metal may at first seem counterintuitive, we should remember that the framework of many aquarium stands are made from different metals. But even in the modern acrylic aquariums Metal may be present not in an actual physical form, but through the presence of other items representing Metal. For instance, gold is a Metal, and can be represented by gold or silver coloured fish.

It is also this colour representation that allows the presence of Fire in the aquarium. Remembering that Fire appears to us as colours, the colours red, orange, and yellow can all represent Fire in the aquarium.

So the actual aquarium itself is an example of combining the elements of Feng Shui. But each of the elements also has properties associated with it. One of the key ingredients to a balanced qi is the Water element, and with the central focus of an aquarium being that element, it is understandable why aquariums have such popularity. The Water element is essential to health and wealth. It is seen as nourishing all living things, and symbolizes the flow of life. The sound of gurgling water is soothing, and it adds humidity to the room the aquarium is kept in. The motion and movement of water increases the positive energy of the area where it is (removing stagnant or negative energy), and brings good fortune and wealth.



There are places where Water should be present in the house (such as at entranceways to facilitate entrance of positive energy), but also several where it shouldn't be. For instance, as water is a restless element (always moving) it shouldn't be present in the bedroom, where you are seeking rest. (So maybe it is a superstition as well a practical recommendation.) Further, kitchens are associated with the Fire element, so you don't want an aquarium in the kitchen as Water and Fire would disrupt the positive influences of each other.

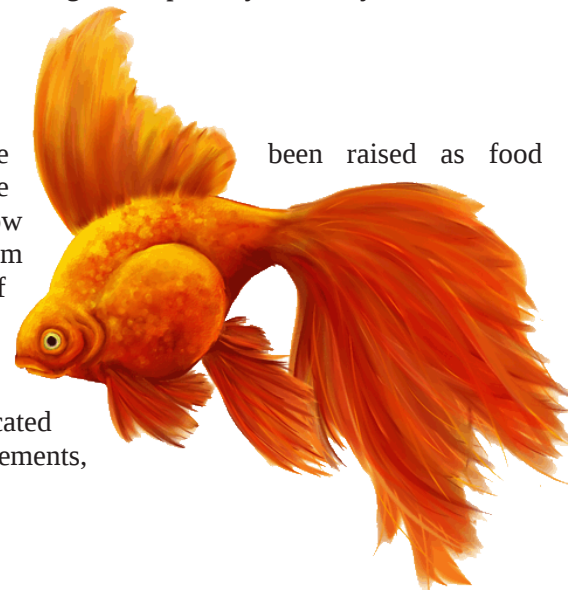
Lucky Fish

But an aquarium without fish is just a bowl of water. The fish can also add positive energy. In the Chinese languages the word for "fish" is pronounced as "yu", but the same pronunciation is also used for "bounty" or "surplus". So the actual word for fish also means financial gain. And there is another aspect of fish that make them a symbol of good fortune. Fish never close their eyes, and it is believed that this allows the fish to see all obstacles and good fortune ahead.

While all fish in general are considered good luck, three types are seen as being especially lucky; Goldfish, Arowana and Flowerhorns.

Goldfish

As mentioned, various species of carp (mostly *Carassius auratus*), have been raised as food fish in China for thousands of years. In process of this aquaculture, the normally silver or grey coloured fish produced red, orange and yellow mutations. This was recorded as early as the Jin Dynasty, which lasted from 265 – 420 AD. During the Tang Dynasty (618 – 907 AD) the raising of carp in ornamental pools and ponds became popular. It was during this time that the selective breeding (rather than natural occurrence) of the red, orange and yellow mutations became popular, giving rise to the domesticated Goldfish (*Carassius auratus auratus*). As the domesticated colours reflected the Feng Shui representation of the Metal and Fire elements, they became extremely popular.



Arowana

Keep in mind that for the most part we are discussing the Asian Arowanas. (There are ten species of Arowanas; four from Asia, three from South America, two from Australia and one from Africa.) While there is some dispute that the Asian Arowanas are actually separate species, many sources accept them as;

- The Green Arowana (*Scleropages farnosus*)
- The Silver Arowana (*Scleropages macrocephalus*)
- The Red-Tailed Golden Arowana (*Scleropages aureus*), and
- The Super Red Arowana (*Scleropages legendrei*)

While all Arowanas are believed to be lucky, the different colours of the above species supposedly bring different sorts of luck to their owners. Green Arowanas are considered the unluckiest of the lot



(which accounts for them also being the cheapest of the Asian Arowanas to buy), while the Silver Arowana is believed to protect a person's home from bad luck and evil. The Red-Tailed Golden Arowana will bring peace to the home, and the Super Red Arowana (the luckiest and most expensive of them all) will keep the owner wealthy.

In addition to the colours, Arowanas are considered lucky because they resemble the dragons of Chinese legend. Dragons were known as the keepers of good fortune.

So the resemblance to Chinese dragons combined with the colours representing the elements of Feng Shui make Arowanas treasured as creatures of good luck and prosperity.

Flowerhorns

I'll admit to being confused by Flowerhorns. The first time I was in a primarily aquarium store (Dragon's Aquarium in Mississauga if I recall), I was surprised to see tanks of Flowerhorns. Still relatively new to the hobby, I didn't (and visually still don't) understand the attraction. But in the Asian aquarium community they are considered very lucky.

Flowerhorns are an interesting if controversial subject within the aquatic community. They are a man-made hybrid, originating in Malaysia in the early 1990's. The Malaysian culture admired fish with protruding heads and considered them to be lucky. As a result, efforts were made to create a hybrid fish that emphasized this feature. The fish that are now known and sold as Flowerhorns reportedly originated from the intentional breeding of several fish including Red Devil Cichlids (*Amphilophus labiatus*), Trimac Cichlids (*Amphilophus trimaculatus*) and Blood Parrot Cichlids (itself a man-made hybrid originating from breeding of the Midas Cichlid [*Amphilophus citrinellus*], and the Firehead Cichlid [*Vieja synspila*]).



Asian

They succeeded in creating a fish that has a very pronounced hump on its head. Supposedly this hump resembles the forehead of Shou, the Chinese embodiment of longevity, as well as symbolizing a calm and stable mountain. So, that's the origin of the "horn" part of the name.

The "flower" part of the name comes from the black marking on the Flowerhorn's body. These are known as "hua", which is literally the Chinese word for flower.

So black markings with pronounced head hump = hua + Shou = flower + horn.

Flowerhorns became very popular around 2003 when someone claimed that they "translated" the black body markings on the side of a Flowerhorn into numbers, played those numbers in a lottery and won.

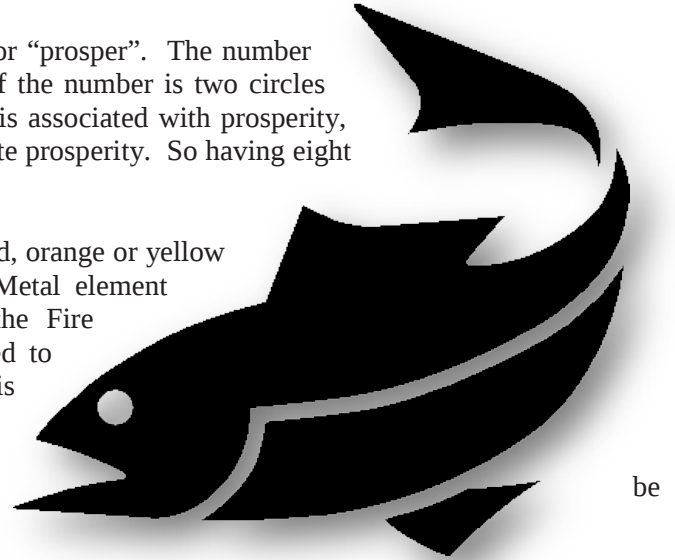
Another interesting way that Flowerhorns have been used in relation to lotteries is to place them in a tank with marbles. On each of the marbles is printed a number. The Flowerhorn will apparently play with the marbles, the owner will record which numbers are selected by the fish, and then play those numbers in the lottery.

Mixing Colours and the Magic 8

But the colouration and type aren't the only aspects that Feng Shui considers when considering which fish to place in an aquarium. Also of importance is the mixture of colours and the number of fish in the tank.

The Chinese word for “8” also sounds like the Chinese word for “prosper”. The number eight is also considered lucky because the physical structure of the number is two circles with no end, and is considered a symbol of infinity. So eight is associated with prosperity, and also with infinity, and therefore has come to represent infinite prosperity. So having eight fish is considered to be extremely lucky.

As mentioned before, the colour of the fish is important, with red, orange or yellow being desirable, both because of their representation of the Metal element (specifically gold) and because of their representation of the Fire element. But to ensure the best possible prosperity, you need to ensure that any negative energy is removed. So it is recommended that you have seven red, orange or yellow fish and one black fish. The black fish will absorb the negative energy of the seven other fish before it reaches you. (It should be noted that some suggest having nine fish, with eight being coloured and one being black.)



be

So there you go. What started as a simple question of why “pleco” is spelled as “pl*co” has provided me with a greater insight into not only some of the superstitions within the aquarium hobby, but also a greater understanding of some of the differences (and reasons for those differences) between the North American and Asian aquarium communities.



This article originally appeared in **Tank Talk**, the journal of the Durham Regional Aquarium Society, Vol. 40 No. 7, March, 2013. It subsequently also appeared in the May 2013 issue of **Modern Aquarium**.

A Life With Fish

Flying Solo

by Jason Gold

I took my first oil painting lesson when I was five. I planted my first radish when I was six. I climbed my first tree when I was seven. I got my first aquarium when I was eight. Soon thereafter, I joined the Greater Atlanta Aquarium Society, entered my first fish show, and went on my first fish-collecting expedition. **Tropical Fish Hobbyist** and **Horticulture** and my growing library of aquarium and gardening books filled me with wonder and wanderlust and taught me about the geography, the variety, the fragility, and the very workings of our precious planet.

Science projects involving my hobbies—not only fish but also plants and gardening and my frequent forays into the woods behind our house (or anywhere!)—got me noticed by math and science teachers, introduced me to a world of technical writing and travel writing and scientific jargon, and eventually, at 17, launched me toward college. My parents thought that all my naturalist hobbies—plus my theater bug, my piano bug, my art bug, and my food bug (I have a long list of bugs, but no bug bug...)—were childhood idiosyncrasies. I'd grow out of them some day and 'get serious'. Well, that never happened. They tried to get me involved in sports—football, tennis, even sailing (not that they'd ever been near a sailboat, but because I liked watery things so much)—without success. I remember overhearing my parents arguing about me. Mom to Dad: "You never even take the boy outside to throw the ball." Dad to Mom: "I don't know if you've noticed, Fay, but the boy doesn't like to throw the ball." I remember, on the one hand, thinking "What's their problem?" and, on the other hand, being hurt that they clearly thought I was somehow flawed.

It's not that they weren't loving parents, it's just that I was not the mainstream, athletic son they expected. Then I committed the gravest sin of all by not going to med school. They never really got past any of that. But to their credit, they didn't get in my way either. In fact, my deep engagement with my hobbies made me an "easy" kid. I could immerse myself in my interests for

hours on end with neither sound nor complaint. My siblings demanded a lot of their attention. In a way, my hobbies—all those bugs—relieved them of all that. I had tons of friends at school, but within my family I pretty much flew solo.

I don't remember dismantling my aquariums before I left for college, and maybe I didn't. Maybe I left them in my parents' care. But before my bed was even cold, they sold the house I'd grown up in and moved to a condo townhouse that not only didn't have my aquariums or my garden, but didn't even have a regular bedroom for me. All my stuff was in boxes in the first floor storeroom next to the garage. "When you're home, you can sleep on the fold-out couch in the den," they told me. The den was on an open balcony overlooking the living room. No door. I was 17 and pissed off at being so immediately relegated to guest status in my parents' home. Guess that's what comes from being such an "easy" kid, huh?

So during the fall mid-semester break of my freshman year, I pointedly opted for a hiking and camping trip in the Shenandoah Mountains with the university's Outdoor Action group rather than heading home to the couch on the balcony. A week in my beloved Appalachian forest carrying all I needed on my back and sleeping under a tarp with a bunch of other grubby undergrads was my idea of adolescent rebellion Nirvana.

They noticed. By Thanksgiving, they'd redone that storeroom next to the garage into my room, with a long carpeted platform big enough for two mattresses end to end and enough pillows that they doubled as both bed and couch. On one wall, Mom hung all the posters I'd designed and silkscreened for all the high school plays and concerts, most of which I'd also performed in. (They did come to all the shows.) It was actually pretty cool, and those posters made it identifiably mine. I now felt that I had a place to come home to and somewhere I could hang out with my friends too. But no aquarium. I got it. That was my hobby, not theirs.

I had arrived at college with the background and scores that made me a likely candidate for the Math Department. I was placed accordingly in the math class meant for future math majors. Theoretical linear algebra—proofs by induction regarding functions operating on infinite matrices. It was torture. Unlike high school calculus, where I could see it all in my mind's eye, for this stuff I had to just muscle my way through. For the first time I understood why some people hate math. When I met with my academic advisor to choose my second semester courses, she assumed I'd take the second half of the linear algebra course. I told her the class made me miserable. She said, "Well you're kind of math-y and tech-y, and also kind of artsy...maybe you should try an architecture course." That was possibly the best single piece of advice I ever received in my entire life. That course lit me up in the same way that calculus had; I could see it all in my mind's eye. When it came time to declare my major, it was not math or biology or chemistry, it was architecture and urban planning.

But in a way, all of my interests as a child had directed me toward that decision. My parents might not have known what to do with a kid who was interested in aquariums and gardens and forests and streams, but they did occasionally try to offer their awkward support. At one point they got me a subscription to **Better Homes and Gardens Magazine**. Their idea, believe me, not mine. I mean, it was kind of a weird thing for a 10-year-old kid to be reading a magazine for homemakers. But they were trying. The articles on gardening were actually elementary to me even then—reading **Horticulture** and going through gardening books in the library and bookstores and, more than anything else, the deluge of gardening catalogs I pored through spring and fall, had already educated me way beyond the foundation plantings and annual beds that **BH&G** proffered.

The articles about kitchens and bathrooms and decorating schemes were of no interest to me either. But there was something that did very much catch my eye. Each month, there was a featured house. I realize now that they were all very typical, cookie-cutter suburban houses, very much like our own house in Atlanta and the other houses in our neighborhood. There were the ranch houses (like ours), the split-levels, the center-hall Colonials, the French Provincials, the English Tudors, the Modernist A-frames. They'd have renderings of the houses and also floor plans.

I'd look back and forth between the plans and the images, and I learned how to decipher a floor plan from **Better Homes and Gardens**.

Now, in addition to drawing elaborate private zoos and companion-planted organic gardens, along with detailed lists of every species from Innes's **Exotic Tropical Fish** that I dreamed of tracking down in the wild and bringing home to breed, I started to draw houses. Fantastical, Space Age houses made of weird cubes and swooping curves. Underground houses with giant glass skylights. Tropical bungalows with breezeways and palm trees. And Colonials, French Provincials, English Tudors, and Modernist A-frames too. Plans and elevations in pencil and oil paint to add to my drawings and paintings of anthropomorphized flowers and fish.

So taking that first architecture course the second semester of my freshman year was sort of a homecoming, an affirmation of all my strange hobbies and the stacks of strange drawings I'd accumulated since I was a kid. Architecture used the same speculative thought pathways as my fantasies of paddling up the Irrawaddy or spawning the Splashing Tetra, rotating a curve around an axis, or losing myself in a character on the stage or a Beethoven sonata. It was a fit for the way I was wired. It made my brain happy.

Plus, in that architecture course I'd met a bunch of other kids who were kinda wired that same way. Now I was part of a whole community of similarly-flawed headcases. Not that anyone else had come to architecture via growing irises and breeding bettas, but however they'd gotten there, that's where they were. There was a common mindset that was familiar to me because, well, it was mine too. And architecture isn't just designing buildings, it's sort of a jack-of-all-trades endeavor. You have to be artistic and technical and socially-conscious and environmentally-conscious and historically-conscious.

I'd never really connected to my history courses in high school, but once I started taking architectural history, all the social and political history made sense too. The architecture of Renaissance Italy gave me a context in which to understand all that stuff they'd tried to teach me about the Medicis and the rise of Humanism in 10th grade European History. The architecture of early 20th-century Europe opened a window for me into the causes of the two World Wars. And the architecture of that same period in the U.S. explained and exemplified this nation's

emergence as a world power in a way I could finally grasp. We architecture students shared in these revelations and designed them into our student work. And, as with my ongoing theatre bug, it was happily, blessedly social and hyper-collaborative.

After graduation I decided that I'd spent too big a chunk of my life up to that point pursuing A's and wanted a break, a year off before continuing to grad school. My dad ran a garment factory in North Georgia, and he helped arrange a job for me assisting at the company's Madison Avenue showroom. And that's how I found myself living in NYC. I moved with one of my college roommates into an apartment on 15th Street in Brooklyn in what's now Park Slope. But back in 1982 it was in the purgatory between the already-gentrified nucleus of Park Slope closer to Flatbush Avenue and the charming but kind of time-warped Mayberry of pre-gentrification Windsor Terrace. Whatever: I fell in love with New York City the nanosecond I arrived. That spring, I sold my car to my younger sister and drove it down to her in Atlanta. I haven't owned a car since. And that August, my girlfriend and I, with my college roommate still in tow, got a two-bedroom on West 95th Street in Manhattan. There were three welfare hotels on our block. Whatever. I started architecture school that September, and feeling somewhat settled, I got myself an aquarium.

It was a 20H that sat in our cramped living room on a metal and mosaic end table between the couch we'd inherited from the previous tenant (someone we knew, which is how we got the apartment) and my drafting table. I started to investigate the world of the aquarium hobby in the Big Apple. I found Crystal Aquarium on 93rd & 3rd, New Age on W. 8th St., the precursor to Petqua on the top floor above the plant store on W. 96th St., Aquarium Stock down on Warren St., and the place whose name I can't even remember on Amsterdam Avenue between 72nd & 73rd. I quickly became a regular at all those places, but especially at Crystal.

Two years later, when my girlfriend and I got our own apartment on West 87th Street, I upgraded to the 75 I still have today. I knew there had to be an aquarist community in this huge city, but I don't remember seeing any flyers for meetings or auctions at the stores I frequented. And this was still pre-internet. I did join the American Killifish Association—they regularly had killies at Crystal Aquarium, and for a few years I was way into that slice of the hobby. I did meet a couple of local

killie keepers that way, but no one who became a long-term friend or hobby partner. So it remained in many ways a solitary pursuit. Everyone loved the big aquarium, and many confessed to having had a tank when they were a kid, but no one else in my world was a devoted aquarist like me. Still, after my college hiatus, I was back in the hobby and loving it.

It wasn't until years later—we're talking the late-aught's—that I picked up a Brooklyn Aquarium Society flyer at Pacific Aquarium. By then, the arrival of Petco and Petland Discounts had pretty much decimated the uptown independent aquarium stores, and my main fish-shopping destination was Manhattan Chinatown. But thanks to that flyer, I went to BAS's semi-annual Giant Auction. It was another homecoming; I hadn't been to anything like that since I was a kid in the GAAS. It was there that I learned about Greater City and loved those meetings too. It was this wonderful world of fish people and fish talk, a release from all those years of doing it all alone.

Both meetings were a major schlep from my Upper West Side life, and I'd go when I could, a few times a year. I was also a single dad by then, with family obligations that definitely took precedence over an evening in Coney Island or Flushing indulging my fish fetish. When I did go, I'd have to leave the office early, and my co-workers knew that that usually meant a "fish meeting." Then there'd be the long train ride home late at night and a couple more hours settling in my inevitable auction purchases. But it was totally worth it. I really enjoyed every single meeting I was able to get to.

Friends ask, "What really goes on at those fish meetings, anyway?" And I describe the whole thing—coffee and Entenmann's to start, then announcements, a lecture, a raffle, and an auction. "Huh, sounds actually legit," is a common response, as though they're expecting something totally alien, beyond the event horizon—although they definitely find the idea of auctioning off live fish kind of, well, slippery. "Hey, you know you could come with me any time, see for yourself. It's this whole self-contained world in a way. I think you might even enjoy it!" Mostly, nah. I did, however, get a couple of takers. Two girlfriends, several years apart, came with me out to Coney Island to see what all the fuss was about. And they were both favorably impressed, loved the geekfest energy, the spirit, and the intensity of the aquarium crowd. Not that either ever came a second time, but I appreciated that they were at

least interested enough in me and my interests to make the effort, and was gratified that they both honestly did seem to enjoy the experience in their own ways.

I'd also made the same offer to my two kids, who were adults by now. We're talking more like 2017 or so at this point. My son works in the food world, which means mostly at night, so aquarium society meetings don't work with his schedule. But eventually.... My daughter, however, is a journalist and writer and has more flexibility. She did come with me to one of the BAS Giant Auctions a few years ago. I was so nervous! I really wanted this to be a positive experience for her. I plied her first with dinner at Randazzo's, in Sheepshead Bay, which was a good move. That Shrimp Parm is a surefire path to deep contentment. Then we continued on to the NY Aquarium, and walked into the bright room on the boardwalk buzzing with fish people and anticipation.

My daughter is usually more of a watcher than an immediate engager, but she dove right in, smiling, talking to people, asking questions. In fact, I don't think I'd ever seen her work a room like that before or since. Sometime during the evening, mid-auction, I glanced over to see her engaged, attentive, actually at the edge of her seat. I whispered, "You seem to be really enjoying this." She whispered back, "You know, Dad, it's just kind of amazing, these huge inked-up dudes bidding for the privilege of taking care of some tiny little fish." She got especially excited when I won the bid for a pair of *Corydoras* CW045. (I now have a whole flock of them in my 75.) The

night was long, and we parted ways at Metrotech so she could head to her place in Crown Heights. She turned to me and said "Dad, I had a really great time," and I knew she meant it. I was grinning the rest of the way home.

Not long after, she let me know that she was writing a piece about her experience there for a hipster literary journal called **Believer**. She hoped I didn't mind. Of course not! In fact, I was flattered. She also needed some facts, like the Latin names of fish, the size of my big tank, how much gravel it held, and so on. When her piece was published, I was too impatient to wait to buy it at Barnes & Nobel and found it online. There in the glow of the screen was her story about growing up in the glow of an aquarium, with its ever-changing vistas into another world and with the dad who was custodian of both worlds. And about being at that auction. It was structured like so many chapters in my favorite novel, **Moby Dick**, starting with a list of bare facts and ending with sheer poetry: "Ever since I was a kid watching the aquarium's undaunted life unfold, I have learned from him to sense the thrills that emanate from small things: the tiny details, odd moments, singular connections that build over time to a larger joy. Even just waiting around, observing the scene, I felt like a winner too."

The tears were rolling long before I got to that final passage. Since I was five and six and seven and eight, I had learned to fly solo, to live without the affirmation of my loved ones. The days of doing without were over.



GCAS Classifieds

**Two tanks for sale. 75 gal & 40 gal-long OR 55 gal & 29 gallon
Stand, filters & heaters included.**

Contact Dan R if interested.

**Talk to me at our next meeting or email danrad545@earthlink.net
Pickup only.**

GCAS Member Discounts at Local Fish Shops



10% Discount on everything.



10% Discount on everything.



10% Discount on everything.



10% Discount on everything.



10% Discount on fish.



10% Discount on everything.



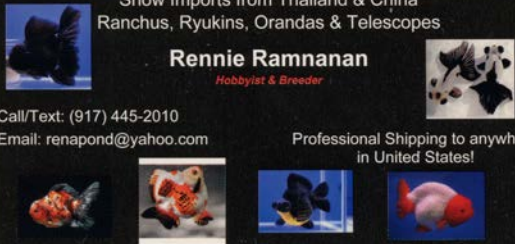
10% Discount on everything except 'on sale' items.

High Quality Exotic Goldfish
 Show Imports from Thailand & China
 Ranchus, Ryukins, Orandas & Telescopes

Rennie Ramnanan
Hobbyist & Breeder

Call/Text: (917) 445-2010
 Email: renapond@yahoo.com

Professional Shipping to anywhere
 in United States!




JUNGLE BOB ENTERPRISES, INC.




4130 Sunrise Hwy
 Oakdale, NY 11769
 ph: 631-319-6592
www.JungleBobAquatics.com

Manufacturer of Quality Reptile & Aquarium Supplies

917-300-2293

124-11 Jamaica Ave
 Richmond Hill, NY 11418

naturesreefandreptile.com

Mon-Sun
 10 am - 8 pm

[natureefandreprs](#)

[nature_reef_reptile](#)

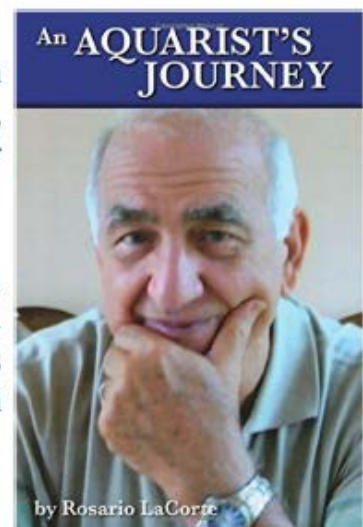


An Aquarist's Journey

Rosario La Corte is one of the world's leading authorities on breeding fish and he has written numerous articles and books, contributing greatly to our understanding of fish and their habits.

Now, for the first time, here is a compilation of his travels, adventures, successes (and, very occasional failures) all relating to collecting, keeping, and breeding fish, and in his own words (and edited by **Modern Aquarium's** Editor, Dan Radebaugh).

Available in softcover at [Amazon.com](https://www.amazon.com)



Pictures From Our Last Meeting

Photos by Jason Kerner



Excellent turnout for our first meeting in 2024!



The auction table is looking pretty good!



President Emeritus Joseph Ferdenzi, Vice President Ed Vukich, and President Horst Gerber



Joe Ferdenzi presents door prize to new member Adam Escoto.



Joe Ferdenzi presenting his talk on Emperor Tetras.

March Bowl Show Results:

1st Place: Richie Waizman
Red Dragon Betta

2nd Place: Richie Waizman
Red & Blue Dragon Betta



Fish As Cognitive Bubbles?

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.

Anyone that has driven in rush hour traffic or tried to leave a crowded stadium at the end of a football game has observed a common dynamic in a collective motion environment. As the number of people grows and the desire to exit increases, the flow of people (or cars) will slow considerably and become intermittent due to clogging events at bottlenecks. When the situation is an emergency, panic can quickly sweep the crowd. In the worst-case scenario, humans have triggered fatal stampedes, with tragic examples occurring in the last decade at sporting events, religious pilgrimage sites, and music venues.

Other animals have also been observed to collide and otherwise start clogging at bottlenecks during high stress situations, with only ants known to manage a constant and optimized flow even in high stress situations. As it turns out, at least some fish may be better at managing that stress than humans.

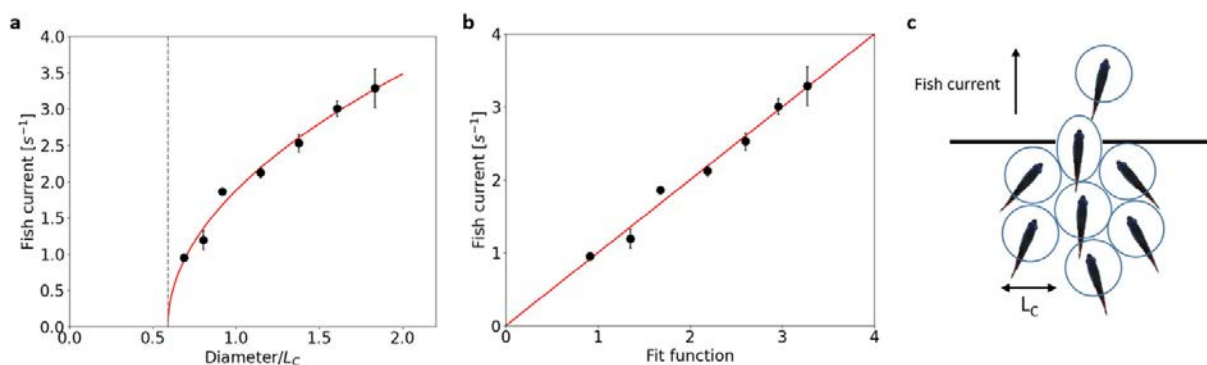
A team of scientists used neon tetras to research whether or not fish would behave similarly to virtually all other animals while trying to escape from a potentially dangerous situation. The scientists chose neon tetras because they readily shoal with other neon tetras and rarely venture away from a group alone. The scientists set up groups of 30 neon tetras in shallow fish

tanks, created a narrow bottleneck in the middle of the tank, and then used a fishing net to encourage the fish to swim through the bottleneck.

The scientists observed that neon tetras tend to patiently queue at the bottleneck and attempt to keep a particular distance between each fish. The result is that rather than colliding with other fish and passing through the bottleneck intermittently, the neon tetras continue to pass through at a relatively regular pace (though predictably, the rate of flow decreases somewhat as the size of the bottleneck decreases). The scientists believe that the neon tetras' strong social hierarchy (confirmed in earlier research) allows them to maintain the prescribed physical space between each fish even when faced with a stressful scenario requiring escape from danger. The scientists have also theorized that because water creates a relatively frictionless environment, it may also make collisions and clogging less likely.

The authors theorize that the research could be used to help improve safety and efficiency in human evacuations from high density, high-stress environments. The researchers believe, in part based on other research involving people, that human evacuations may be improved if people are instructed to maintain minimum distances while exiting through the bottleneck (and the Undergravel Reporter is separately aware of research demonstrating that traffic jams move faster for everyone when cars do not tailgate, so as to allow easier and faster merging). The biggest hurdle, of course, will be "training" people to observe that physical distance even in true life-or-death situations, when panic has set in.

Source: <https://www.nature.com/articles/s41598-023-36869-9>



Fish as cognitive bubbles. (a) The modified Beverloo's law fits well the fish current when the cognitive length is taken as the characteristic size of the deformable particles. (b) Fish current plotted versus the fitted

function to evaluate the goodness of the fit. The red line is as a reference. (c) Schematics of the model of cognitive bubbles dictating the fish behavior.

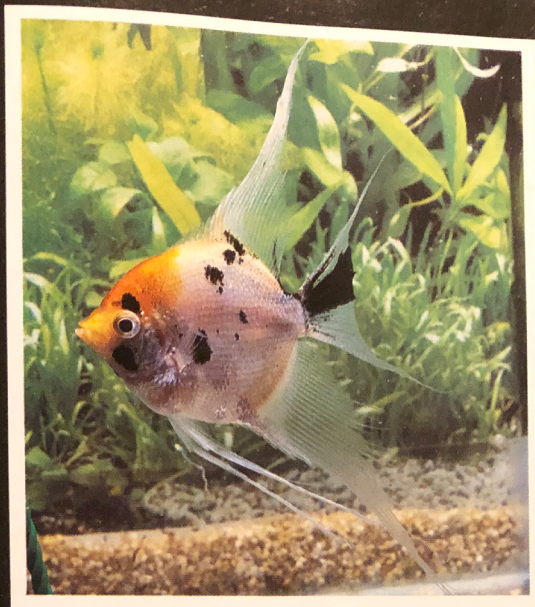


From The Pages of Yesteryear

Tropical Fish Hobbyist

December 1987

Ghianni's Koi Angel



World's Cleanest Hatchery Introduces the First New Angel Since 1976

Introducing the World's first quarantined, computer monitored, high-tech Angelfish and Discus hatchery! Ghianni's Koi, Black Veils, Marble Veil, Gold Marble Veil, Gold Blusher Veils, Gold Veil, Zebra Veils, Black Lace, Leopard Veil, and silvers, with many more standard and veil angels available; as are Turquoise, Red/Turquoise, Heckle-Royal Blue Cross, and Tefe Green Discus — all from Jack Wattle strains, Brown Discus, and Schmidt-Frocke Red Discus. All "Koi" Angels are PERSONALLY bred by Jody Ghianni. "Ghianni Koi Angels" are now being offered in limited quantities.

VEILS \$24.75

STANDARDS \$19.75

Send name, address, telephone number with 50% deposit to hold order. Make cashiers check, or money order payable to: New Breed International Fisheries, Inc. Live delivery guaranteed.

All Angels and Discus are tank bred, NO IMPORTS, clean, and alive upon delivery. Orders for all stock accepted from Jobbers, Wholesalers, Retailers, and Mail Order Hobbyists. We ship internationally! Send \$1.00 and SASE for full price list of all available strains.

**NEW
BREED
INTERNATIONAL
FISHERIES, INC.**



1001 Missouri Blvd., Jefferson City, MO 65101 USA • All Inquires (314) 634-5963
Telex/Easy Link # 62840544 (62840544 ESL UD) Telex # 424107 (IPMO6MO) Facsimile # (314) 635-3036

In Missouri, distributed through Fish-n-Stuff Aquarium/Summit Aquatics Unlimited, 1406 Missouri Blvd., Jefferson City, MO 65101
Missouri residents add 6.225% Missouri sales tax.



Koi Organisation International

Can You Be a Better Koi Keeper, and Do It At Your Leisure?

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



