

modern AQUARIUM



June 2019
volume XXVI
number 4

Greater City Aquarium Society - New York

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Series III Vol. XXVI, No. 4 June, 2019

ON THE COVER

Our cover photo this month shows some Acan, Birdsnest and Montipora corals, kept and photographed by Joe Gurrado, who also photographed this month's Pictures From Our Last Meeting. We see a lot of Joe's photos on our Fishy Friends Facebook Page; it's good to once again see some of them in an article! Look for "A Slice of Reef," on page 14.

Photo by Joseph Frank Gurrado

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From the Editor

by Dan Radebaugh

This month's issue of **Modern Aquarium** covers a lot of territory, and in doing so reveals how much territory we do regularly cover. This month we once again pay tribute to two people who over the years have been important contributors, both to Greater City and to the hobby in general. One of these is Anton Vukich, who also received a loving send-off in last month's issue. In this issue, please look for Steve Sica's article "Good-Night, All Creatures Great and Small."

Also, I mentioned last month that we would be reprinting some articles from earlier years of **Modern Aquarium** as part of our tribute to Alan Fletcher, an important figure in the history of our hobby, and long-time friend of Greater City and of **Modern Aquarium**. This month we reprise Alan's article on how World War II contributed to the rise to prominence of the aquarium hobby during its "Golden Decade," the 1950s. It starts on page 24. Check it out!

A few of you probably know that Joe Gurrado is Greater City's delegate to the North East Council of Aquarium Societies (see our masthead on page 1). More of you probably know that Joe has been judging our bowl shows of late, and I expect that quite a few of you have noticed that Joe has been taking photographs of our meetings (for example, see "Pictures of Our Last Meeting" on page 8 of this issue). Those of you who are regular visitors to our Greater City Aquarium Society Fishy Friends Facebook page will certainly have noticed the photos that Joe posts there on a regular basis. That's covering quite a bit of ground, right? Well, that ground has just increased. On page 14 you will find Joe's second article for **Modern Aquarium**, "A Slice of Reef," wherein Joe explains how he maintains his reef tanks, of which he supplies so many photos on our 'Fishy Friends' page. We look forward to more—both photos and articles!

On page 17, Jules Birnbaum, a frequent **Modern Aquarium** contributor, tells us about his 70-year



search for the "perfect aquarium fish." Intrigued? I was too! Our exchange article this month is by Derek Tustin, who you may recall wrote an article a few years ago for **Modern Aquarium** on the subject of rainbowfish, for which he won an FAAS award. This current (exchange) article, "Talking... (*Doradidae*)" was originally written for the Durham Regional Aquarium Society in Canada.

On page 19 I briefly review Jeremy Wade's new program, **Dark Waters** (on Animal Planet). Most of you I'm sure will recall Wade from his earlier series **River Monsters** and **Mighty Rivers**, also on Animal Planet. As always, the issue ends with the (again) award-winning The Undergravel Reporter, and the Fin Fun puzzle. Enjoy!

Remember—we need articles! We always need articles! Even with all the outstanding articles in this issue, we still need more for next month! We have a lot of members in this club, and many of you really know a lot about what you're doing. So tell us about it! Write it down! Email it to me! Include pictures if you have them! We wouldn't be coming to these meetings if we didn't want to learn stuff and share stuff! It isn't that hard, and people all over world will read about it! This is not an exaggeration! Next month I'll show you some recent reader statistics.





GCAS Programs

2019

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

March 6	Gary Lange <i>Cruising Papua - Following New Roads and Exploring "The Bird's Head"</i>
April 3	Mark Denaro <i>Cichlids I Hate</i>
May 1	Harry Faustmann <i>Live Foods</i>
June 6 (Thursday)	Breeders' Forum <i>Moderated by Joseph Ferdenzi</i>
July 3	Joseph Ferdenzi <i>The Story of Endler's Livebearer</i>
August 7	A Night at the Auction
September 4	Tom Keegan <i>Spawning Various Types of Tropical Fish</i>
October 2	Jim Cumming <i>TBA</i>
November 6	Greg Steeves <i>TBA</i>
December 4	Holiday Party!

Articles submitted for consideration in *Modern Aquarium* (ISSN 2150-0940) must be received no later than the 10th day of the month prior to the month of publication. Please email submissions to gcas@earthlink.net, or fax to (877) 299-0522. Copyright 2019 by the Greater City Aquarium Society Inc., a not-for-profit New York State corporation. All rights reserved. Not-for-profit aquarium societies are hereby granted permission to reproduce articles and illustrations from this publication, **unless the article indicates that the copyrights have been retained by the author**, and provided reprints indicate source, and that two copies of the publication are sent to the Exchange Editor of this magazine. For online-only publications, copies may be sent via email to gcas@earthlink.net. Any other reproduction or commercial use of the material in this publication is prohibited without prior express written permission.

The Greater City Aquarium Society meets every month except January and February. Members receive notice of meetings in the mail or by email. For more information, contact: Dan Radebaugh at (718) 458-8437, email gcas@earthlink.net, or fax at (877) 299-0522. 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

Your Prez is asking for help. Have you ever wondered how a club like Greater City functions? Some of the things that must be done are obvious. Jules Birnbaum's job for instance is a big PITA. Acting as cashier during the meetings and taking all your money, including your kids' college funds, and even more important, your coffee money! Now you're thinking, "What are you talking about, Gerber? We don't pay for coffee and cake at the meetings! Wrong! Coffee, cake, sodas, cups, etc.—we buy all that stuff! Then after we take in all the auction money Jules has to figure out who gets back 50% of the price and who doesn't. Then there's the rent to the QBG, the magazine, honoraria for our speakers, and so on. But my point is not about today or about Jules' job.

So what is the point? It is that we are approximately 100 members, and getting volunteers to keep this club running like a well-oiled machine is not easy. In fact it's like pulling teeth! Everyone expects things to run perfectly—the slide projector, the sound system, the auction, the raffle, the magazine, the bowl show, finding and communicating with our sponsors, keeping track of the breeders' award program, finding and engaging good speakers and taking care of their needs, and so on and so on! Getting all of these things done means that some of us have to pitch in and do it! Believe me, I don't make Trump's salary for being President!

The first page of your **Modern Aquarium** lists the jobs that are necessary to keep a club like ours going, and tells you who is doing them. We need to fill some of these! After many years of service, Warren Feuer has stepped down as Chairman of the Breeder Award Program. Thank you, Warren, for doing such a great job for all these years! This is a position that requires a great knowledge of fish, and some talent at record keeping as well. We are very lucky that Joe Graffagnino has graciously volunteered to take on this very important position! Thank you, Joe!

Now to the other jobs that we need to fill. For the past three years (Yes, you read this right, **three years**) we have needed someone to take the helm of our Programs Committee. This committee's responsibility is to find and engage speakers for our meetings. We meet ten times per year. August is our big Auction meeting, and December is our annual Holiday & Awards Banquet. That leaves eight meetings per year for which we need speakers. We are a large club, with many talented members, so we can fill some of those other eight meetings ourselves, but we also want and need to hear from other experts (locally and nationally renowned) as well. It isn't as easy as you might think to find eight interesting and diverse speakers every the year. We've somehow managed to get by on an ad hoc basis for the past few years, but having one well-organized person to oversee and coordinate the effort is a real need.

The third job we need to fill is the Membership Chairperson. Marsha Radebaugh took over this job back in 2008 when her husband Dan became Editor of **Modern Aquarium**. Dan then became President the next year. Dan stepped down as President after eight years, but Marsha has continued to keep track of our membership—who is a member, are they paid up, do they have membership cards (these allow you, by the way, to get discounts at certain local fish stores), making sure we have your contact information so that we can let you know what's going on, handing you your monthly copy of **Modern Aquarium**, and so forth. Marsha would now like to go back to being a 'civilian' so she can just enjoy the meetings. If you are well-organized and get along with people, we need you!

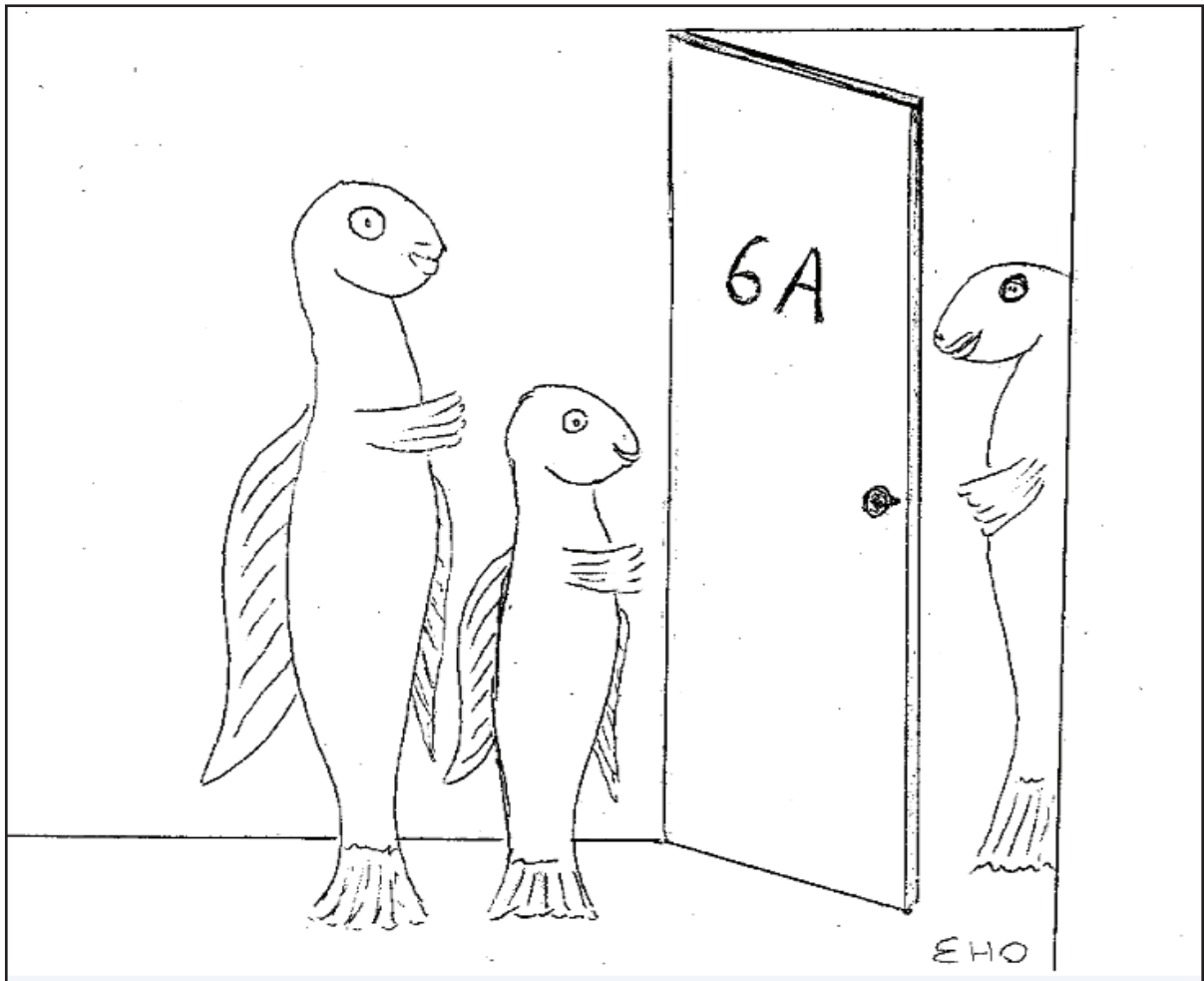
The last job we need to fill is a new one for Greater City, and we haven't really decided what to call it. Sergeant-at-Arms, perhaps, or Crowd Control Coordinator? For this job we need someone who makes it to most meetings, has a loud, annoying voice, and is able to insult members and get away with it. After all, we like our members! My air-horn doesn't work as well as it did at first (people got used to it), I gave up on the gavel, the old subway bell still has some charming effects, but I need help. The background conversations at times just get to be too much to conduct the meeting over. That slows the meeting down, and really makes it a challenge to get anything done and get us out on time. Please come see me if you think you can handle this!

See you next month!

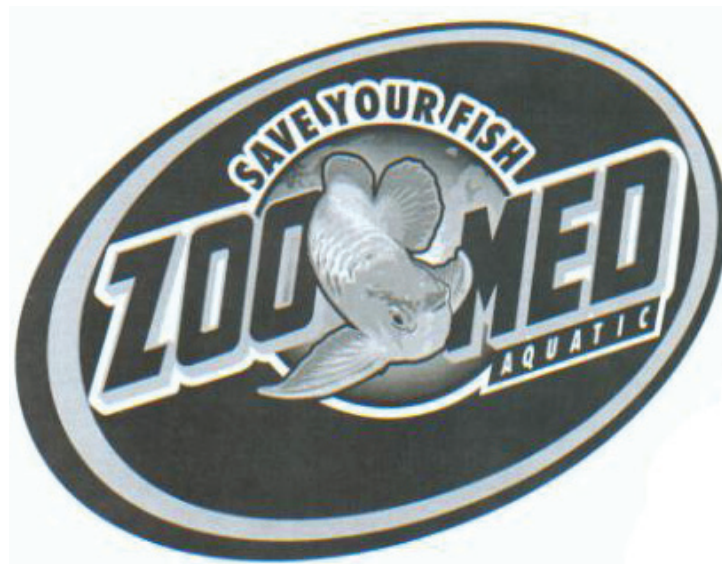
Horst



May's Caption Winner: Carlotti de Jaeger

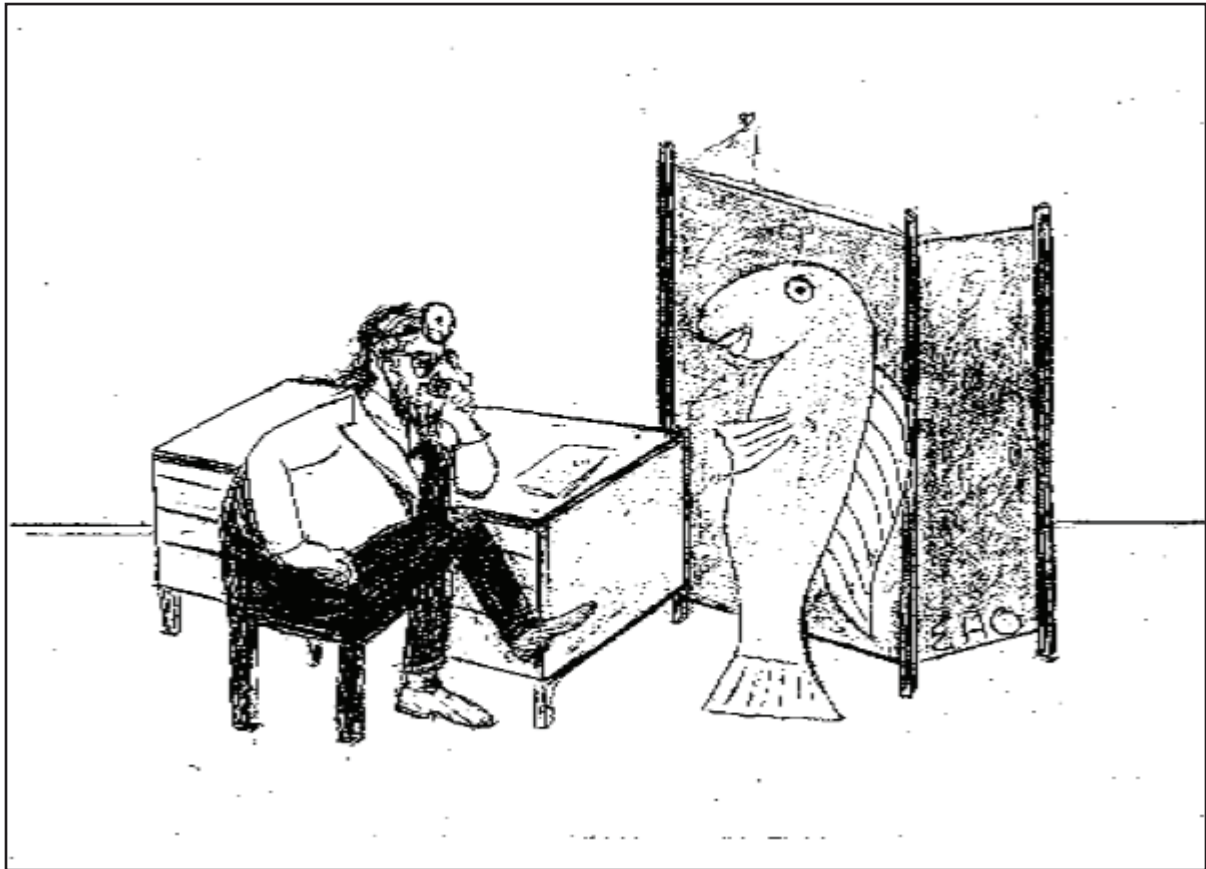


Happy Mothers' Day!



The Modern Aquarium Cartoon Caption Contest

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



Your Caption:

Your Name:

Meeting Reminders



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

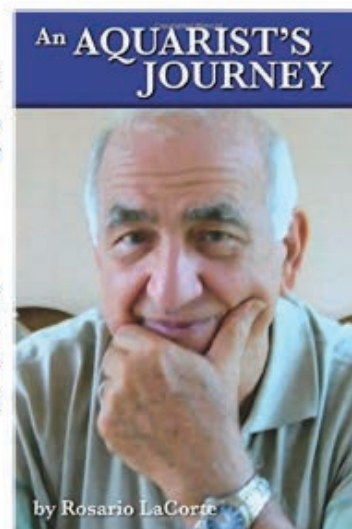
Unlike some aquarium societies, at Greater City there is never a charge for non-members to attend, there is no “bidder card fee” to bid on items in our monthly auctions, the refreshments are free to everyone at the meeting, and anyone can purchase raffle tickets. But membership does have its privileges,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

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

Photos by Joe Gurrado



The crowd grows restless as the meeting gets ready to begin...



Harry Faustmann warms up for his presentation on Live Foods.

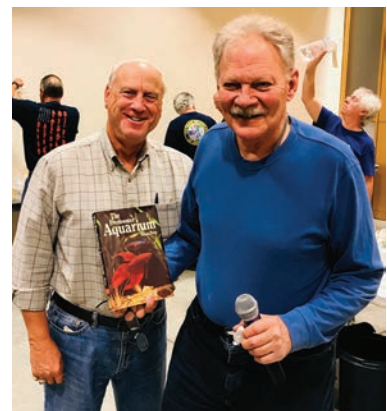


Raffle prizes await their winners.

Our Last Meeting



Vice President Ed Vukich congratulates Bowl Show winners Richard Waizman, Tom Keegan, and Buzz Buzzetti.



Our President, Horst Gerber, presents Steve Sica and Joe Graffagnino with their awards from the NEC Articles Competition, and Ed Vukich awards Peter Goldfien the evening's Door Prize.



Our crack auction team gets some coaching from Larry Whitfield.



Our financial team, Ron Wiesenfeld and Jules Birnbaum, discuss with Jeff Bollbach whether his fishroom constitutes an underwater asset.





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Good-Night, All Creatures Great And Small!

Story and Photos by Stephen Sica*

Most of the above title of this essay came to me when my mind began formulating this piece after two sad events not very long ago. I recalled the title as a public television series that I watched on channel thirteen many years ago. When I sought insight about the title from my primary fact checker, Donna, she said that it was the name of a book, without the “Good-Night,” written by James Herriot. I researched the late author and found that he was an animal doctor who prowled the English countryside serving his patients. I was pleased to discover that I stole my title from such an outstanding and caring individual. The deal about the title was sealed by Donna, herself. When we and Cordelia (our dog Cordelia usually sleeps with us) cuddled in bed at night, Donna would culminate our day with, “goodnight all creatures great and small,” before we fell asleep.

In the world of fish, I would consider a whale to be a great creature. Of course, a whale is not a fish, but for me it's close enough. I think that a blue whale is the largest animal on our planet. Although the blue whale is a really impressive animal, it makes perfect sense that you don't have to be large to be great. I recall one autumn morning a few years ago while walking Cordelia in Alley Pond Park. I discovered the tiny nose of a field mouse sniffing through the fallen leaves. It was aware of off-leash Cordelia and

hesitant to poke its head above the leaves. It was both fascinating and humorous. We quietly followed the mouse's trail of gently shuffling leaves for a minute or two until it moved on. I have always considered this experience a great event by a small creature. Late last summer we spied two hummingbirds in the park. You can readily believe that great creatures or events do really come in “small” ways. Both were plainly enjoyable experiences for us.

When I read in **Modern Aquarium** that Anton Vukich, Ed's brother, had passed in an accident, it started me thinking about another soul who had passed a few weeks earlier. This creature was Panda, a seventy pound, mixed breed, rescued dog in her third year of life. While her humans were out of their home on a fateful March 2nd Saturday, a fire consumed their house. Panda, who was home alone, was overcome by smoke. On many weekday mornings promptly at 7:30 AM, Donna and I would walk with two other women and our frolicsome dogs for a mile or two through woods and on paths in Alley Pond Park in Queens. Charley, Cordelia, and Panda ran around off-leash, having so much fun. It truly was a dog's life! Dogs are very loving, and it is very easy to love them back. Of course, some individuals either do not like dogs, or are fearful of them. That's okay too, but true believers know.



Panda and friends with Donna



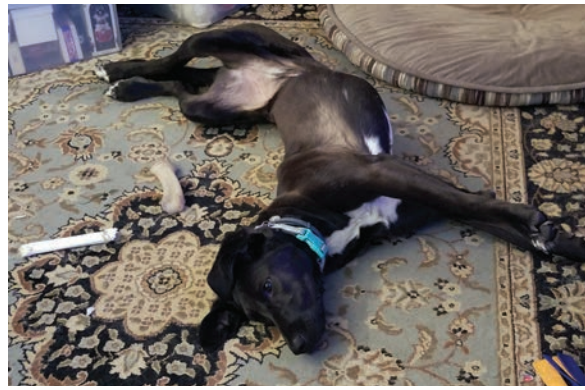
Panda at rest



Panda on leash



Panda at her dogsitter John's home



Panda lounging on rug



Anton's cactus



Another view

When I read Anton's remembrance in the March **Modern Aquarium**, it spoke about his aquarium skills and accomplishments, but I also recalled him as a "plant man." By nature, I am a fairly quiet person who doesn't talk a lot. Although Donna and I have been members for more than twenty years, I don't think that I've used more than fifty or so words to have a conversation with any GCAS member. I spoke with Anton a few times (I think that I saw him at one meeting last year; we just smiled and nodded to each other. Donna does the talking in our family.) Every now and then Anton would bring one or more plants for auction at the monthly meeting. I recall purchasing an occasional plant from him over the years. Whether I still have any of those plants is a mystery to me. There are a dozen or so plants in our home, and who

knows where they all originated. I do have one plant in particular that I recall admiring at a meeting many years ago. I believe that my successful bid was ten dollars. The plant was a magnificent cactus. I either do not recall the species, or never knew it. I have had this cactus for at least fifteen years. During that time I have relocated it around my house, transferred it to a much larger pot, and trimmed it every year or two as it pushes up to the ceiling. It currently resides in an alcove in our dining room. It needs another trimming, but its needles never fail to prick my hands during this procedure.

Interestingly, every time I see the cactus I think of Anton, and I see the plant dozens of times a day. Right now, I am writing this on my computer while sitting at the dining room table with the cactus only



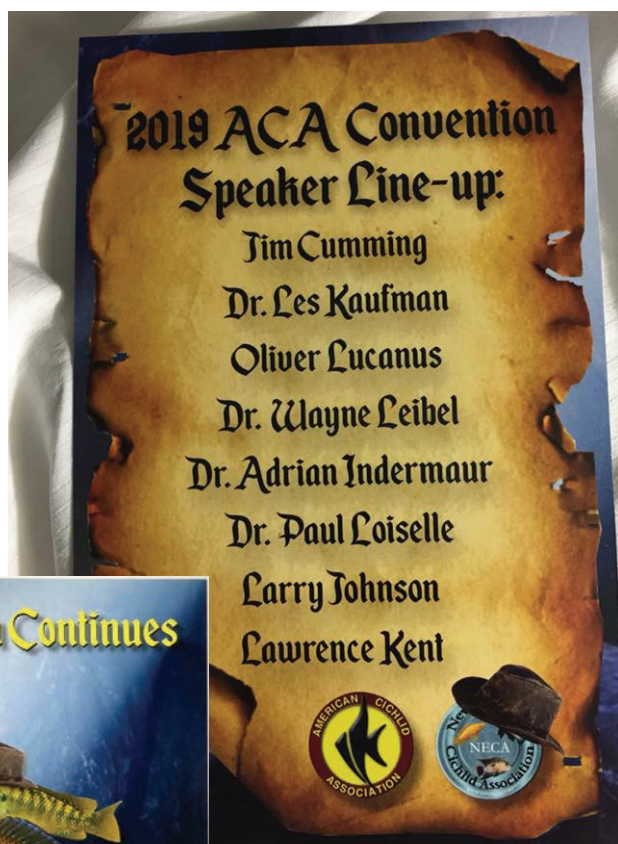
Joe Ferdenzi presents Anton Vukich with the 2006 Gene Baiocco Aquarist of the Year Award. Photo by Claudia Dickinson

four feet to my left. I guess that the cactus is a good example of a memory—perhaps a living memory that can never be erased. Anyway, I remember Anton for his plants, and to me that's a very good thing. I remember Panda as a vibrant young dog running, as fast as she could through the woods and fields of Alley Pond Park. That is good too. I know that this simple story has nothing to do with aquariums and fish, but I hope that it touches upon the preciousness of life and love.

Good night, Anton. Good night, Panda. So long for now. You're gone from my life, but never from my heart. Someday may we all meet and be happy together when we cross the Rainbow Bridge.



*Panda Photos by John Pflug



A SLICE OF REEF

THE TRIALS AND TRIBULATIONS OF BUILDING A CORAL REEF

by Joseph Frank Gurrado



A small view of my coral reef tank. There are many types of corals thriving in this ecosystem.

Three years ago I consolidated several aquariums into a single fishroom in my basement, with the goal of creating an aquatic ecosystem that emulates actual real-life coral reefs, similar to ones found in many tropical climates. My fishroom currently houses three saltwater reef tanks along with eleven freshwater planted aquariums, but this story is all about the hard work and determination required to replicate a complex coral reef ecosystem in your own home.

Of the three reef tanks I currently keep, one is a 75 gallon mixed reef, mostly comprised of soft corals and beautiful fish. My second reef tank is a 13.5 gallon reef that contains only three tiny fish in addition to LPS (large polyp stony) and SPS (small polyp stony) corals. However, this article focuses on my third aquarium, which is a 40 gallon breeder aquarium that houses a complex habitat of various types of LPS, SPS, and soft corals. In addition to the various coral, there is also an array of small reef fish and invertebrates that help keep the tank clean.

To start with, the tank is a 40 gallon Aqueon breeder, which I hooked up to a 20 gallon Eshopps refugium, which is placed below the display tank.

I installed an Eshopps protein skimmer, which is primarily used as the reef's main source of filtration.

Once the base tank was fully set up, I put in two inches of white sand, placed about thirty pounds of live rock, and then created a reef formation designed to hold coral frags in place at a future time. Once the rock formations were in place, I filled the aquarium with RO/DI¹ water mixed with Instant Ocean Reef Crystals set to a specific gravity of 1.026. I then turned the pumps on and began circulating the cloudy water.

The lighting that I chose for this tank consists of three Kessil 160 WE Tuna Blues, carefully hung about eight inches above the water surface to evenly distribute the light. The reason for this is to eliminate shadowing near the sides and corners.

Several other types of equipment include an in-line UV sterilizer, an in-line GFO reactor, which aids in the reduction of phosphates, and an in-line Bio Pellet reactor, that helps reduce nitrates and phosphates. In order to keep and grow coral reefs, the water quality must be pristine, and very low in dissolved compounds. This allows the coral to absorb as much of the available nutrients as possible.



Scolymia corals, of the family Mussidae, native to Australia.

The goal in keeping a reef system is to keep the water parameters stable at all costs. Tank stability is the key to success. To aid in keeping my system functioning smoothly, I also have an Aqua Medic 4-pump dosing system in place to pump in magnesium, alkalinity², calcium, and a twice weekly dosage of trace elements. The lighting is automated through a pre-set controller with a three-hour ramp-up time, a five-hour mid-day lighting period, and a three-hour ramp-down period. There is a pinpoint pH monitor in place to take readings throughout the day.

This system does not require a heater, because my fishroom's temperature is regulated at a steady temperature. During the summer months, my entire fish room is air conditioned to prevent my tanks from exceeding 79° F. Coral does not do well in warm temperatures (that exceed 81°). Coral is a very unique organism; they require intense stability. That extends to lighting, temperature, and water chemistry. My current readings are: pH 8.4, alkalinity 8.7, magnesium 1350, and calcium 470. My goal is to keep these numbers as stable as humanly possible. Phosphates should be kept at 0.05 or less because they inhibit the growth of the coral reef and contribute to unwanted algae growth.

Once all the systems were in place and operating, I placed a small yellowtail damsel into the tank and allowed it to cycle. The cycling period has its ups and downs, but a lot of patience is needed for what's still to come. As the tank and water cycle, you can expect a diatom outbreak, which is signaled by a brown film that coats the sand and rockwork. It is important to let this period run its course—in due time it will clear up on its own.

The next phase is green algae, which also requires patience. As long as you monitor the water quality and keep your lighting low, your coral reef will not develop too much unwanted algae. The ultimate goal is for the system to develop coralline algae, which is a colorful form of algae. Once coralline algae starts to encrust the reef, all your hard work is beginning to pay off!

Once the tank is completely cycled and has fully stabilized, you can begin introducing coral frags into the tank. The placement of these frags is crucial, as different corals require different amounts of water flow and lighting levels. Some require intense lighting, whereas others require more moderate or lower light. These can be placed into corners or areas of the tank that receive less light.



Red Dragon Breath Macroalgae

In conclusion, once the coral frags are placed optimally, patience is still required, because the growth rates can be extremely slow. Unlike freshwater aquariums, tap water should not be used for water changes in a reef tank, as it contains too many dissolved compounds that can have adverse reactions on the reef. RO, or better yet RO/DI water should be used. Due to these many requirements, reef aquaria are not for everyone. Unless you have adequate resources, an alternative solution may be a nano reef system, which is more suited to apartment dwellers.

Worldwide, natural reefs are under tremendous pressure due to pollution and global warming. The more hobbyists become involved in reefing, the greater the chances will be that corals will continue to live on, and maybe in some cases even be reintroduced back into the wild. Happy reefing!



¹ **RO/DI Reverse Osmosis:** A technique for purifying water, in which pressure is applied to force liquid through a semipermeable membrane in the opposite direction to that in normal osmosis.

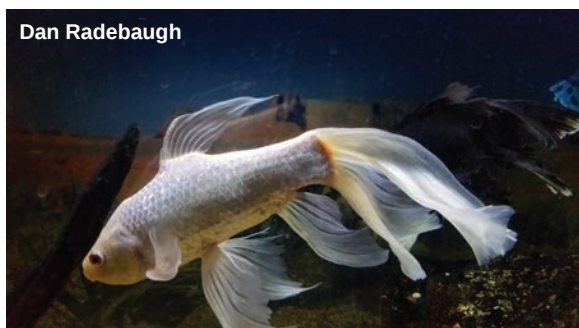
Deionize: To remove ions from (a solution) using an ion-exchange process.

² **Alkalinity** is the capacity of water to neutralize acids. This capacity is caused by the water's content of carbonate, bicarbonate, hydroxide and occasionally borate, silicate and phosphate. pH is an expression of the intensity of the basic or acid condition of a liquid. EPA has a suggested range of 6.5 to 8.5 for pH (called a secondary maximum contaminant level or SMCL). Furthermore, alkalinity and pH are different because water does not have to be strongly basic (high pH) to have a high alkalinity (**EPA's Drinking Water Glossary: A Dictionary of Technical and Legal Terms Related to Drinking Water Opens a New Window. , EPA810-B-94-006, June 1994**)).

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!



MY 70-YEAR SEARCH FOR THE PERFECT TROPICAL AQUARIUM FISH

by Jules Birnbaum

Like many of you, I have been searching for the perfect tropical aquarium fish. I have 34 tanks in my two fishrooms. Yes, I have two fishrooms, 30 tanks in our converted garage, and four aquariums in my upstairs “man cave” den.

I guess I should define what the ‘perfect’ fish is. To me it is one that can be housed in small tanks, be able to tolerate a wide range of temperatures, eat anything, be neither territorial nor shy, and will swim throughout the tank. It must have spectacular color, and it must not destroy my live plants. It must be challenging, but not too difficult to breed. This fish must not be less than 4" in length. I think I’ve defined one of the basic community fish.

My search started 70 years ago, with guppies, angel fish, platies, tetras, and cory catfish.

My hobby has developed since I retired, and I’ve been keeping and breeding dwarf cichlids, rams, plecos, small cichlids from Lake Tanganyika, killies, discus, and rainbows. Somewhere amongst this collection must be the perfect fish. Each of these species has flaws. Some need high temperatures, some need frequent water changes, and some are picky eaters. Plecos are always hiding and do not swim. Corys are bottom dwellers and usually do not swim much. Discus, while colorful, can be boring because of their slow movement. They also need rather large tanks, high water temperatures, very frequent water changes, and can be costly to purchase.

Tetras are small and colorful, are active swimmers, and will eat anything. They are fairly tolerant of water conditions, and most are not difficult to breed. I consider them close to perfection for smaller aquariums, but not *the* perfection I’m looking for.

Dwarf cichlids are small, interesting fish, but as adults they are very territorial and are not very active swimmers. Some can be colorful and will eat anything, but some need special water conditions, so although I like dwarf cichlids, they are not my perfect aquarium fish.

Most killifish require only small tanks, and most (males) are extremely colorful. Some will eat anything, but others will only eat live foods. They are fairly tolerant of water conditions, and breeding is usually not very difficult. One, two, or five gallon tanks are usually good choices for a pair. They are

jumpers, so the tank tops must be tight. Although most killi keepers keep them in separate tanks, they *can* be kept in a community tank. They are not perfect, but are pretty close to it.

Corys and Plecos are interesting fish with interesting color patterns. They are usually small, and can keep a tank clean. They will eat anything. However, they usually hide, and are only bottom swimmers. Although in most tanks I keep them as a cleanup squad for leftover food, they are still not my choice for the perfect fish.

Livebearers such as guppies, platies, and swordtails, can be colorful. They are not demanding of water conditions, and will eat anything. They are not aggressive, and will swim throughout the tank. Since they are small, I’ve kept

pairs of Endlers in tanks as small as 2½ gallons. They are easy to breed (maybe too easy?). Some produce as many as 50 fry per spawn. I keep them, but they are still not my perfect fish.

I’m sure you have noticed that I have not mentioned large fish, such as Oscars or arowanas. These are very large, aggressive fish, and need very large tanks. They are great fish to look at if you have the space, but still not the perfect fish I’m after.

I’ve actually come to the conclusion that no fish is perfect, but I’ve found one that is close. It is the rainbow fish. A middle-of-the-tank swimmer, neither aggressive nor demanding of water conditions, they will eat anything, and they are colorful! Rainbows are also relatively easy to breed, although raising the fry can be challenging.

In all my years of keeping and breeding tropical fish I had never kept rainbows until Jeff Bollbach brought a few to a GCAS auction several years ago, and I took a bag home. GCAS has had Gary Lange, the foremost expert on rainbow fish, as a guest speaker for the past two years, and his presentations piqued my interest in rainbows.

The rainbow fish (*Melanotaenia*—Greek meaning ‘black-banded’) comes from Australia, New Guinea, and Indonesia. They rarely exceed four inches in length, but the one I favor is less than 3 inches. They call them rainbows for a reason—there are so many color variations!

I currently keep five species. *Melanotaenia boesemani* is Madagascan (comes from Madagascar),





Melanotaenia boesemani
Photo from Wallace Deng

M. trifasciata the Goyder River, *Glossolepsis dorotyi* (Dority's Rainbowfish), and the Wapoga red laser (*Melotaenia rubrivittata*). The red laser is a smaller rainbow, measuring 2.5 inches. The color is a silver-blue body with red fins. I developed a colony by placing a pair in a 20" long tank completely covered in Java moss. Some fry survived, and I now have a colony of about twenty very active adults. I've also used a mop similar to those used to harvest killifish eggs. The red lasers are kept at 78 degrees with a pH of around 7.2. Filtration is supplied by two 5-inch Swiss Tropical sponge filters (they are the best). I do a 50% water change once a week.

These fish have ferocious appetites! I feed them flake food in the morning and blackworms or frozen bloodworms in the evening. There are so many great rainbows to select from, and this fish meets all my criteria for the perfect fish.

After all these years my conclusion is of course that there is no perfect tropical fish, but some come close. The rainbowfish is one of those. I'm sure each of you has your own favorite.



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Dark Waters

A Review by Dan Radebaugh



Jeremy Wade, featured scientist/fisherman of Discovery/Animal Planet's **River Monsters** and **Mighty Rivers**, has returned in a new series, **Dark Waters**, which premiered on April 21st. This new series features Wade as he investigates unsolved aquatic mysteries in remote areas of the world. "Delving beneath the waters, Wade will journey to islands long forgotten and open oceans to solve reports of the sudden disappearance of an entire fish species, genetic oddities that might have produced bigger monsters, and unexplained sightings of mythical beings."

The first episode was titled, "Italy's Lake Monster." According to legend, one of Europe's most beautiful lakes guards an ancient secret. First reported in the 16th century, the Lake Garda Monster has been described as a huge humped beast – half snake, half dinosaur. Jeremy travels to Northern Italy to investigate, but is faced with more than one possible culprit. It turns out these lakes and rivers, despite being in one of Italy's most populous regions, could be hiding more than one enormous beast worthy of the monster title.

River Monsters had quite a long run. The format was sort of **CSI Big Fish**, where our hero would investigate watery scenes of carnage, and try to find out whether an aquatic monster of some sort was responsible for the mayhem. For the first couple of years it worked pretty well, and did a lot of educating, while clothed in semi horror story garb. More

recently though, at least in this reviewer's opinion, it had become rather too generic and predictable. The **Mighty Rivers** series was very well presented and informative.

I was quite favorably impressed by the first installment of this new series. It seems to have a well-focused point of view, and takes into account various kinds of human activity and attitudes that could account for some of the apparent anomalies in each situation. I recommend it. Below is part of an interview with Wade on USATODAY.COM'S **For The Win**:

FTW: You mentioned myth and folklore. You've traveled all over the world. Do you find that there are common threads that tie these stories together, or are these stories unique, and can they tell you something about the place you're visiting, the people, what they fear and what they believe?

JW: It's interesting. You do get these similar stories everywhere. And I think part of that is because the underwater world is so unknown. The human mind doesn't like a vacuum. We will populate that vacuum with the contents of our own head, and often that's scary stuff. It's a blank canvas. Often what happens is that real creatures get mixed up. They'll get our own baggage mixed up with their reality, and part of my job is to sort that out. One I've found in many places is these mermaid stories, in particular. When we did

that episode (in South Africa) we ended up visiting a witch doctor. Often in these different cultures, these underwater creatures will only communicate with special people, who act as intermediaries to the underwater world. We went and observed this sunrise ceremony on the shore in South Africa, and I was reminded of other similar ceremonies I'd seen all over the world.

There are common things in all of these rituals. A lot of it is about protection. Even without the creatures living in it, water is dangerous. We have an ambivalent relationship with water. It's the source of life, it's the source of food, but it's also a source of death if you're not careful.

There are rituals to keep you safe. There are also rituals to protect fishermen. It's about securing food, and keeping them safe in the face of danger. But the other thing very common is this idea that you must show respect to the environment. The idea is that spirits will protect you, but only if you treat this realm, this environment, with respect. You can take fish out of it, but if you take too much, bad things will happen and we will no longer protect you. And that is common. You'll find it in Mongolia, in the Amazon, in New Zealand, you name it.

From time to time people will criticize that aspect of the program. They'll say, "What are you doing showing these primitive rituals? You're an intelligent guy, you should know that is all mumbo." My response to that is, "Maybe you're partly right. It's all very colorful, and sure it's great TV. But there is real wisdom there about respecting the environment that more enlightened people, supposedly, have forgotten all about."

FTW: I feel like you could write an anthropology thesis at the end of this show.

JW: It's interesting, but you're exactly right. I've become an accidental anthropologist. I set off traveling, and when I started, I'll be honest, I was only interested in fish. Sure, I'll interact with the people, but it's all about just getting to the fish. But then you realize you're just getting an entirely different take on these people through the fish. And now we're set on trying to cover as much of that as possible in the program.



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Talking...

(Doradidae)

by Derek Tustin

Do you have that one species of fish that you have an unbridled affinity for? That one special species that just strikes a chord with you that you want to keep no matter what? Perhaps something that you have kept every time the opportunity presents? I think we all have a small group of species that no matter how unattractive other aquarists may find them, we want to keep them.

I think you all know by now my absolute fascination with rainbowfish, and the extent that I am willing to go to obtain certain species. Given that, you might be surprised to know that my “soft-spot species” isn’t a rainbowfish, but rather a catfish, specifically the White-Spotted Doradid, *Agamyxis pectinifrons*. (Or it actually might be... but I’ll get to that in a bit.)

Agamyxis pectinifrons is a member of the *Doradidae* family. The etymology (or meaning of the word) of *Doradidae* is from the Greek word “doras”, which literally translates as “leathery skin”, and the “idae” being a suffix attached to denote the naming of



Agamyxis pectinifrons

a zoological family. Essentially, this is the family of catfish with a leathery skin.

Planetcatfish.com currently lists 95 species of *Doradidae* across 32 genera. All members of the family are from South American river basins, but are absent from the Pacific coast drainages and from drainages south of the Rio de la Plata. The majority of the species, 70%+, are from the Amazon basin.

They are nocturnal for the most part, and physically have scutes, or a line of bony projections, along the lateral area of the body. These projections are very sharp, and are the method of natural protection of the fish. In general, they are not the most streamlined of catfish, but as a group they are very interesting

in appearance. The species range in size from 3.5 cm (1.5”) (*Physopyxis lyra*) to 120 cm (47”) (*Oxydoras niger*). They have three pairs of barbels, an adipose fin, and... they talk!



Agamyxis pectinifrons

I currently have ten *Agamyxis pectinifrons* in my largest tank at home, with the longest living being over 8 years old. Over that time that I’ve kept this species, I’ve had to move the fish on several occasions, either due to residential moves or tank re-arrangements. Each time that I have done so, I’ve marveled (and my wife has shivered – she finds it eerie) as the catfish makes audible sounds when removed from the water. This sound, often referred to as “talking” is the result of the fish grating its pectoral fins against the fin socket. This noise is then amplified by the swim bladder and sounds like a croaking noise. Every fish in the family has the same ability to produce audible sounds. (By far the best way to move the fish is via a jar or pitcher. The scutes of the fish tend to get caught in any net used, making it very difficult to remove the fish. Further, I’ve experienced the scutes of the fish



Amblydoras nauticus.

Reprinted from Tank Talk – Jue, 2013 - Volume 40, Number 10; Durham Region Aquarium Society

puncturing plastic bags, so I recommend moving these fish in harder containers such as Tupperware.)

While there are 95 species, only three species (or maybe five depending on how you look at things, but I'll get to that in a bit) are commonly available to the aquarist. In fact, two species were available at our auction in April. The three named species that you will most often see offered for sale are the aforementioned *Agamyxis pectinifrons*, *Platydoras armatulus*, and *Amblydoras nauticus*.

The Raphael Catfish

The most commonly available of the talking catfish is *Platydoras armatulus*. Commonly called the Raphael catfish, it is also sometimes seen labeled as the humbug catfish, the striped talking catfish or the chocolate talking catfish (the latter being used mostly in the United Kingdom). However, most aquarists will believe the correct binomial name of this fish to be *Platydoras costatus*. For decades, *P. costatus* was believed to be the correct name, but a paper published in 2008 (*Platydoras brachylecis*, a new species of thorny catfish [Siluriformes: Doradidae] from northeastern Brazil by Nivaldo M. Piorski, Julio C. Garavello, Mariangeles Arce H. and Mark H. Sabaj Perez) determined that the correct binomial name of the fish was actually *P. armatulus*.



Platydoras-costatus

Growing to approximately 20 cm (8") in length, they have a dark brown upper part of the body, with a white/beige coloured lateral line which runs back down the body from the head. This stripe actually runs right along the line of scutes on the side of the body. The ventral surface is usually cream or beige in colour.

Native to Paraguay and portions of both the Amazon and Orinoco River basins, they prefer to be kept in a group (with four fish being the minimum desired number), but care needs to be taken to provide sufficient retreats for each fish, as they can squabble over the best hiding place, and the strong pectoral fins can result in minor injuries from such disputes.

They are a nocturnal species and as such are much more active during the night. A red light flashlight can assist in viewing of these fish after "lights-out," although as they age they may become active during feeding time and hence viewable with the tank lights on. Very easy to feed, they will relish frozen bloodworms, and sinking foods including both

shrimp pellets and algae wafers. Interestingly enough, they also are an excellent fish for snail control.

Unfortunately, while first described in 1840, there have been no reports of breeding in home aquaria, and as a result all available fish are wild-caught.

Now, remember how I mentioned that there may actually be five species of *Doradidae* that are commonly available? *Orinocodoras eigenmanni*, native to the Orinoco River as the genus name suggests, is a separate species of *Doradidae* that appears very similar, at least on first glance, to *Platydoras armatulus*. Thus some imports of *P. armatulus* (likely those gathered from the Orinoco River) have been known to contain the odd contaminant of *O. eigenmanni*. If you carefully examine a tank full of *P. armatulus*, you may find the occasional *O. eigenmanni*, and several aquarists have been known to gather a school of them in this fashion, keeping them separate from the *P. armatulus*. The two main differences are that *O. eigenmanni* has a more pointed nose and the scutes tend to be smaller.

The White-Spotted Doradid

The next most commonly available of the Talking Catfish is my personal favourite, *Agamyxis pectinifrons*, commonly labeled as either the white-spotted doradid, the spotted talking catfish, or the spotted Raphael cat. Four of these fish were available at the 2013 Aquariamama.

Native to Ecuador and Peru, the basic colouration of the fish is black to chocolate brown with an irregular smattering of white or beige coloured dots over the body and fins, with no two fish having identical patterns. They are a hardy species, with reports of a potential life span in excess of 17 years. They will remain slightly smaller than *P. armatulus*, usually only reaching a maximum size of 15 cm (6").

The recommended care and diet is essentially the same as *P. armatulus*. However, unlike *P. armatulus*, there have been scattered reports of this fish breeding in the home aquaria, with the fish apparently being a bubble nest builder, or laying eggs on floating vegetation at the water surface, and further reports that breeding can be induced via the use of hormones.



Agamyxis pectinifrons

Also, like the relationship between *Platydoras armatulus* and *Orinocodoras eigenmanni*, *Agamyxis pectinifrons* has a sister species, *Agamyxis*

albomaculatus, that may often be a contaminant in imported shipments. However, unlike *P. armatulus* and *O. eigenmanni*, there are no visual differences between the two species, and the only way to tell the two apart is via dissection to determine the number of gas bladder tendrils. Hence there is no way to know if a fish identified as *A. pectinifrons* is indeed that species or actually *A. albomaculatus*—at least not and still have a live fish.

Marbled Talking Catfish

The third of the commonly available talking catfish is *Amblydoras nauticus*, commonly known as the marbled talking catfish, blue-eyed catfish, croaking spiny catfish or Hancock's catfish. Two of these fish were available at the recent Aquariama.

This is another fish that for a number of years was known under a different name, specifically *Platydoras hancocki*. As a result, this fish is often still referred to as Hancock's catfish. Sometime in either 2008 or 2009, it was realized that the genus had been misidentified, and that the fish was actually *Amblydoras nauticus*.

The smallest of the three common talking catfish at 10 cm (4"), it should also be kept in a group with a minimum of four fish. Widespread throughout the

Amazon region, this is a fish with a beige to caramel coloured body, a slightly lighter coloured ventral region, and a light scattering of small black dots across the body.

Care and dietary requirements are the same as *Platydoras armatulus* and *Agamyxis pectinifrons*, and again is a fish that has not been bred in captivity.

So there you have it, three species (or five if you count the contaminants) of talking catfish that are sometimes available and would make an excellent addition to any community aquarium. But I would ask that if you consider keeping these fish, you remember that they really like to find a secluded spot to spend the daylight hours. If you don't provide caves in rocks or under driftwood, they will try and wedge themselves in any place that they feel provides some sort of cover. One common place will be between the side of the tank and an aquarium heater, and this often results in burns to the body of the fish, sometimes resulting in death and often in badly burned skin. If you keep them, please provide the appropriate cover, and strongly consider heater shields to keep these reclusive creatures safe.



Current Latin Name	<i>Platydoras armatulus</i>	<i>Agamyxis pectinifrons</i>	<i>Amblydoras nauticus</i>
Old Latin Name	<i>Platydoras costatus</i>	-	<i>Platydoras hancocki</i>
Common Names	Raphael Catfish	White-Spotted Doradid	Hancock's Catfish
	Stripped Talking Catfish	Spotted Talking Catfish	Marbled Talking Catfish
Length	20 cm (8")	15 cm (6")	10 cm (4")
Temperature	24 – 30°C (75 – 86°F)	22 – 26°C (72 – 79°F)	23 – 28°C (73 – 82°F)
pH	5.8 – 7.5	5.5 – 7.5	5.5 – 7.5
Difficulty	Easy	Easy	Easy
Compatibility	Community	Community	Community



How World War II Contributed to the Golden Decade of the Aquarium Hobby, the 1950s

by Alan Mark Fletcher



This DC-3 has flown millions of fish. Looks like Atkinson Field, British Guiana.
From Alan M. Fletcher.

Reprinted from *Modern Aquarium* – Series III Vol. XVIII No. 6 August, 2011.

First of all, it is important to point out that WWII was all-consuming for Americans, in a way that had not been seen before and will never be seen again. Every aspect of our lives was in some way directed toward the war effort. We were told what we could eat (food rationing), where we could travel (fuel rationing), what we could say, and what we could wear; and we willingly complied. We gave up most of our civil rights, confident that they would be returned to us after the war. My father, who was a Presbyterian minister, and in poor health, went to work in a New Jersey defense factory. My mother worked as a secretary in a government office. My older brother enlisted in the Navy halfway through his college education and served as a quartermaster (steers the ship) on a small gunboat that went in with the landing troops to provide cover fire, in several of the later Pacific invasions. As a teenager I was a warden, trained to search for enemy planes (which never came!) and to watch at night for homes that might be violating the blackout regulations. I was in ninth grade on Dec. 7, 1941. The Pearl Harbor attack took place on a Sunday. On Monday morning the junior high principal called us all into the school auditorium

to hear President Roosevelt give his famous “Day of Infamy” speech, live.

We were only a typical family. Everyone worked in some way to win the war. Even members of pacifist religious groups went to work in hospitals and other essential non-military services.

Just this morning I received a query from Steve Hinshaw, in Alaska, asking why the cover of his 1942 copy of **Exotic Aquarium Fishes** looks so different from the other editions. It was the war. Everyone had to make do with what they were able to get their hands on—even printers. I suspect that those wartime Exotics might be worth more than others.

Al Klee has correctly pointed out that the aquarium hobby and industry benefitted mightily from the U.S. economic boom that followed the war. People had money to indulge in hobbies, and entrepreneurs had the confidence to take a gamble on new products. We even had sufficient wealth that we were able to fund the rebuilding of our former enemies, and the other European and Asian nations that had been devastated by the war. Even the Green Revolution of the 1960s and ‘70s, which made food available to poor countries all around the world, grew out of that post-



Fred Cochu and his pilot, Captain Doc Moor, one of several great pilots employed by Paramount.
From Alan M. Fletcher.

war prosperity. Some cynics have called it geopolitics and U.S. hegemony, but I believe it was American generosity, pure and simple.

The aquarium hobby benefited from the war before it ever became worldwide, however. Many Germans came to the U.S. in the 1930s because they did not like what was happening in their country, and many of them, being Jewish, feared for their lives. The aquarium hobby will owe an eternal debt to some of them, and in particular to Hugo Schnelle and Fred Cochu, brothers-in-law (photo opposite)



Paramount's PBV amphibious plane on Yarina Cocha. To take off the plane had to run the length of the lake to get up on the step, then spin around 180 degrees and race in the other direction to get up in the air. A frightening experience! Photo by Alan M. Fletcher.



Awaiting transportation home. Lagos, Nigeria
From Alan M. Fletcher.

who left Aquarium Hamburg and founded Paramount Aquarium in New York City. Paramount had a virtual monopoly on fish imports to the U. S. during the 1950s.

WWII was the first big war in which aircraft played a dominant role. Even the first unpaved airstrips in remote places like Leticia, Colombia were built for security reasons. But most important, ultimately,



Hugo Schnelle (left) and Fred Cochu, Partners in Paramount Aquarium. Cochu was married to Schnelle's sister.
From Alan M. Fletcher.

for the aquarium trade, there was a huge demand for all kinds of aircraft built in America, but needed for the war effort in Europe and Asia. Thousands of aircraft were ferried from the U. S. to the war theaters. Thousands of Army Air Force pilots did nothing but fly new planes across the oceans. They delivered their planes to where they were needed, and then hitched a ride back to the U.S. to transport another airplane.



Paramount's chief pilot Richard E. "Nick" Nicholas (AOPA 278100) has been flying since 1935
Photos by the author

Paramount makes its aircraft pay by round-trip use. Pilot Nicholas checks a load of day-old chicks flown to British Guiana. Each year the firm flies about 1,000,000 chicks to South America, and brings tropical fish back. To carry delicate living cargo like chicks and tropical fish, an aircraft must have an efficient heating system. Note heating ducts and insulation



Paramount Aquarium's DC-3 being unloaded at Miami International Airport. When the cartons of fish are sorted, some are immediately sent on to customers by commercial lines; the rest are flown to the Paramount plant at Vero Beach, Fla. This load came from British Guiana and Trinidad



There were two main air routes between Europe and North America. Planes could fly to Newfoundland, to Greenland, to Iceland, and finally to Great Britain. But that route was subject to frequent bad weather, and downed pilots stood no chance of surviving in the bitter cold water. The shortest distance across the Atlantic Ocean is actually from the east coast of Brazil to Senegal, West Africa. That became the main route. To make this passage from the New World to the Old possible, U.S. Navy SeaBees constructed airfields, most of them with concrete runways. They built airbases in Panama, Trinidad, British Guiana, Surinam, near Belem at the eastern hump of Brazil, and northern Venezuela. (A raunchy but very popular WWII song was about the airbase at Point Cumana, Venezuela. It was called "Working for the Yankee Dollah". But enough. You can figure out the rest of it.) Many thousands of aircraft of all types hopped between these bases, finally winding up at the Brazil base, where they took on every drop of fuel they could and went across the Atlantic, nearly on the Equator.

After the war these bases became major transportation sites for Paramount Aquarium and a few fringe exporters/importers. On my first trip to British Guiana (now Guyana) we stayed in an abandoned military barracks at Atkinson Field, south of Georgetown. On subsequent trips we stayed with Louis Chung, who was the principal collector of Guianese fishes in the 1950s.

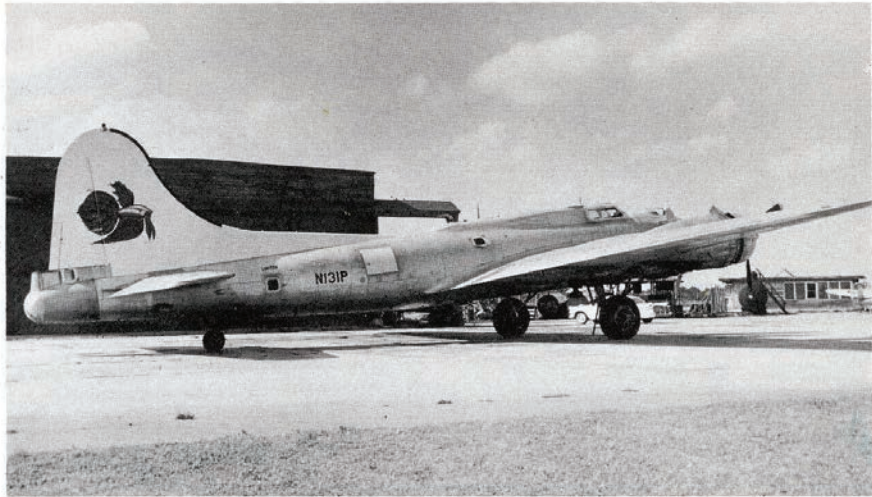
It should be noted here that during WWII, Paramount Aquarium had a secret contract with the U.S. government to collect and import electric eels, for use in secret government research. To my knowledge, the nature of that research has never been revealed. But the important point is that even during the war Paramount had its own aircraft and was able to fly them through any or all of the U.S. bases in South America. When the war ended, they already had a mechanism in place for the transport of all aquarium fishes. No other company had that advantage. I have always wondered how they carried those big metal cans, loaded with high-voltage electric eels. It must have been a great relief to everyone to have been able to shift over to carrying neon tetras!

Immediately after the war ended, thousands of new and nearly new airplanes of all kinds were sold off by the government at a fraction of their true value, or scrapped. Paramount Aquarium was able to take advantage of this surfeit of aircraft. During the 1950s they owned a Lockheed Lodestar, a Navy PBV flying boat, a Curtiss C-46 cargo plane, a converted Boeing B-17 Flying Fortress bomber, a very fast twin-engine light bomber whose designation I cannot recall, and several Douglas DC-3s (C-47, military). I made at least one trip in most of them. The DC-3s had the best cost ratios of any planes Paramount ever owned. They were slow, but they were real workhorses. Some DC-3s are still in service around the world, after 60 years. I would not be surprised if some were still being used to fly aquarium fishes from remote airstrips in South America and Africa.



Fish cans loaded on plane for Paramount Aquarium (before the days of bags and cartons).
From Alan M. Fletcher.

Spare parts for most former military aircraft were abundant, easily available, and inexpensive. On one trip to Leticia in a DC-3 an engine blew out on landing. A new engine was flown in from Miami in a few days, and it was installed by Paramount's co-



Paramount Aquarium's converted B-17 bomber. Shortly after Paramount sold this ship, it was lost in Venezuela under mysterious circumstances
Photo by Bob Palmer

pilot, who was also a certified A&E mechanic. We had intended to be home for Easter, but the delay enabled Fred and me to celebrate the Easter holiday with an Indian Baptist congregation. That was a memorable experience.

I have previously mentioned how this air travel, combined with tightly sealed inflated plastic bags in styrofoam-lined cartons made it possible to fly millions of staple and new fishes to the U.S. in hours instead of weeks, and they arrived in excellent condition. With such quantities of old and new fishes available, it is no wonder the hobby thrived in the 1950s!

The hobby in the 1950s was also boosted by the GI Bill of Rights, which enabled thousands of veterans to attend colleges and professional schools at little cost. Most of the younger ichthyologists of the 1950s who identified the new fishes, and the engineers, chemists, and business people who brought the innovations to the hobby were educated under the GI Bill.

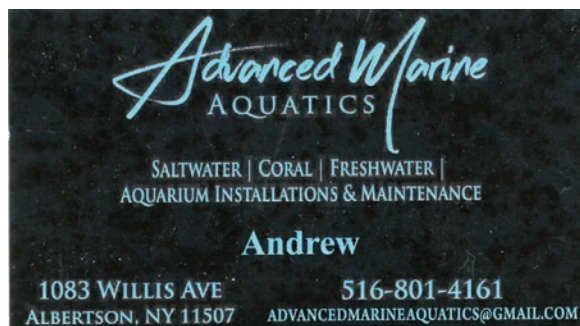
I know that WWII contributed in more ways than these to the boom in the hobby of the 1950s, but I have written enough. Hopefully, other AHHS* members who are as old as I am will be inspired to add to this WWII thread.



*This story was originally posted on the website of the Aquarium Hobby Historical Society:
<http://groups.yahoo.com/group/AquariumHobbyHistoricalSociety/>

Photos on page 26 are from the October, 1965 issue of **The AOPA Pilot** (Aircraft Owners and Pilots Association).

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10% Discount on everything.



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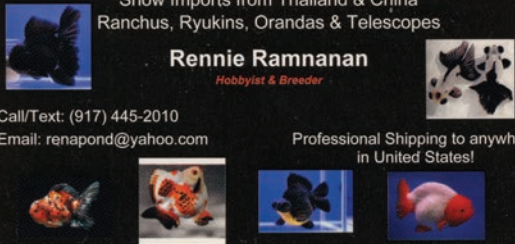
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 Call Derek (917) 854-4405

FOR SALE: Coralife 9-Watt Turbo-Swift U/V, bulb recently replaced.
 Call Kris: 516-282-6677



GCAS Happenings

June

Last Month's Bowl Show Winners:

- | | |
|-------------------|--------------|
| 1 JOHN BUZZETTI | BLUE GULARIS |
| 2 TOM KEEGAN | BLUE RAM |
| 3 RICHARD WAIZMAN | BETTA |

UNOFFICIAL 2019 BOWL SHOW TOTALS:

RICHARD WAIZMAN	17	WILLIAM AMELY	1	JOHN BUZZETTI	5
TOM KEEGAN	3				

A WARM WELCOME BACK TO RENEWING GCAS MEMBERS LAMONT BROWN, DAN PULEO, AND RON WIESENFELD!

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



GREATER CITY AQUARIUM SOCIETY

Next Meeting: July 3, 2019

Speaker: Joseph Ferdenzi

Topic: *The Story of Endler's Livebearer*

Meets: The first Wednesday of each month

(except January & February) at 7:30pm:

Queens Botanical Garden

43-50 Main Street - Flushing, NY

Contact: Horst Gerber (718) 885-3071

Email: pilotcove43@gmail.com

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

BIG APPLE GUPPY CLUB

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

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

Contact: Donald Curtin (718) 631-0538



BROOKLYN AQUARIUM SOCIETY

Next Meeting: June 14, 2019

Speaker: Cameron Provost

Topic: *Rare Marine Fish In The Hobby*

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

NY Aquarium - Education Hall, Brooklyn, NY

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

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



LONG ISLAND AQUARIUM SOCIETY

Next Meeting: June 21, 2019

Speaker: TBD

Topic: TBA

Meets: 3rd Friday of each month (except July and August) at 8:00 PM. LIAS Meetings are held at SUNY Stony Brook's Maritime Science area. Room 120 in Endeavor Hall on the State University at Stony Brook Campus, Stony Brook, NY 11790

Email: president@liasonline.org

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



EAST COAST GUPPY ASSOCIATION

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

Environmental Ctr.: 228-06 Northern Blvd.

Contact: Gene Baudier (631) 345-6399



NASSAU COUNTY AQUARIUM SOCIETY

Next Meeting: June 11, 2019

Speaker: TBA

Topic: TBA

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

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

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



NORTH JERSEY AQUARIUM SOCIETY

Next Meeting: June 15, 2019

Speaker: Karen Randall

Topic: *Planted Nano Tanks, Plant Travelogue*

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

Contact: NJAS Hotline at (732) 332-1392

Email: tcoletti@obius.jnj.com

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



NORWALK AQUARIUM SOCIETY

Next Meeting: June 20, 2019

Speaker: TBA

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

Contact: Sal Silvestri

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

Email: salsilv44@yahoo.com

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

Microbiomes and Your Fish

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.

Researchers at the Ben-Gurion University of the Negev say that tropical fish can control their gut microbes to help them survive extremes of temperature.

In a study published in *eLife*, a peer-reviewed journal in Great Britain, Professor Itzhak Mizrahi and Postdoctoral Research Fellow Fotini Kokou found that when organisms like plant and animals are genetically selected, the microbes living in their guts are also selected.

Furthermore, the selected microbes respond in accordance with the selection.

This supports the concept of a 'hologenome' – where an organism is not viewed as an individual but as a community, including all the microbes that live within it. Within this concept, host-microbe interactions play an important role in the fitness of the host, while microbiome composition may in turn be affected by host's genetics.

"One of the most significant environmental pressures that affects the fitness of a host organism is temperature," explains Dr. Kokou, the lead author.

The team used the tropical blue tilapia fish, which are normally highly sensitive to the cold, but as part of a selective breeding scheme are being bred with increased cold tolerance at the Agricultural Research Organization at Beit Dagan, near Tel Aviv. This allowed comparison of the microbiomes between the cold-sensitive and cold-resistant fish, at different extremes of temperature.

They found that during cold exposure, the microbes tended to switch off processes that expend energy (metabolism) and turned on cell processes that were related to a stress and defense response. This



mirrored the response seen in the genes of the fish themselves, suggesting that exposure to cold triggers an energy saving, stress induced response that involves both the fish host and its microbiome.

Blue tilapia - Courtesy of the Nonindigenous

Aquatic Species (NAS) information resource study shows that the genetic

background of the host and its tolerance to temperature-induced stress determines the response of the gut microbiome to temperature," concludes Prof. Mizrahi. "Our findings are consistent with the emerging hologenome concept, which suggests that microbes and their hosts work together in a survival of the fittest as part of the natural-selection process."

As Louis Pasteur once observed: "*Messieurs, c'est les microbes qui auront le dernier mot.*" (Gentlemen, it is the microbes who will have the last word.)



References:

<https://www.jewishpress.com/news/breaking-news/israeli-scientists-show-tropical-fish-can-control-their-gut-microbes-to-survive-extreme-temperatures/2018/11/21/>

<https://elifesciences.org/articles/36398>

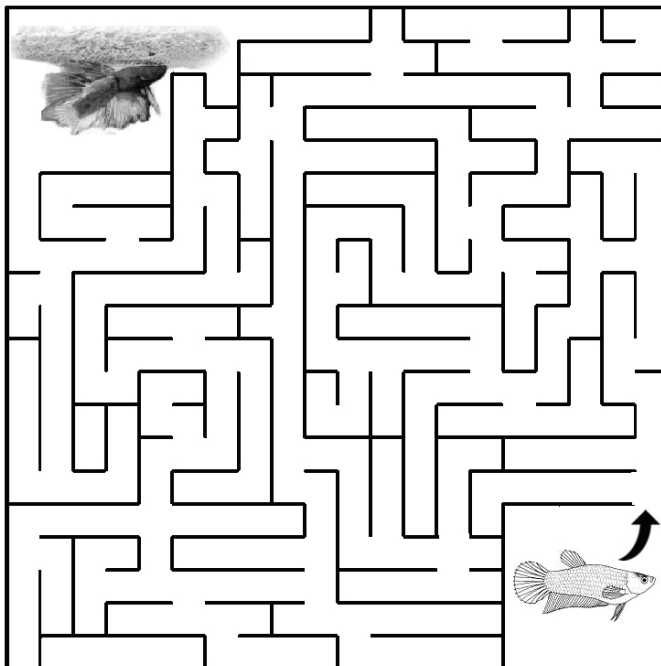


Fin Fun



Meet the Mate

What's the most important thing in spawning fish? Is it water parameters, food, aquascaping, tank size, temperature, lighting, plants, or just plain luck? Well, actually, it's having a healthy male/female pair of fish! See if you can guide the female *Betta splendens* (lower right) to the male and his bubble nest.



Solution to our last puzzle: **UNDEAD FOOD**

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BOWL SHOW RULES

There is a Bowl Show at every GCAS meeting, except our Night at the Auction meeting (August) and our Holiday Party and Awards Banquet meeting (December). These 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 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.
- The current Bowl Show Coordinator is Leonard Ramroop, who usually also serves as judge (although guest speakers are often asked to do the judging honors).
- 2.5 gallon containers are available for use (brought to the meetings by the Bowl Show Coordinator), but entrants are responsible for providing enough (and suitable) water for their fish.
- For a fish too large (or too small) for those containers, entrants must supply a suitable container, which must be clear on at least three sides.
- Only one fish per container (i.e., no “pairs”).
- No plants, ornaments, or equipment (filters, airstone, 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

