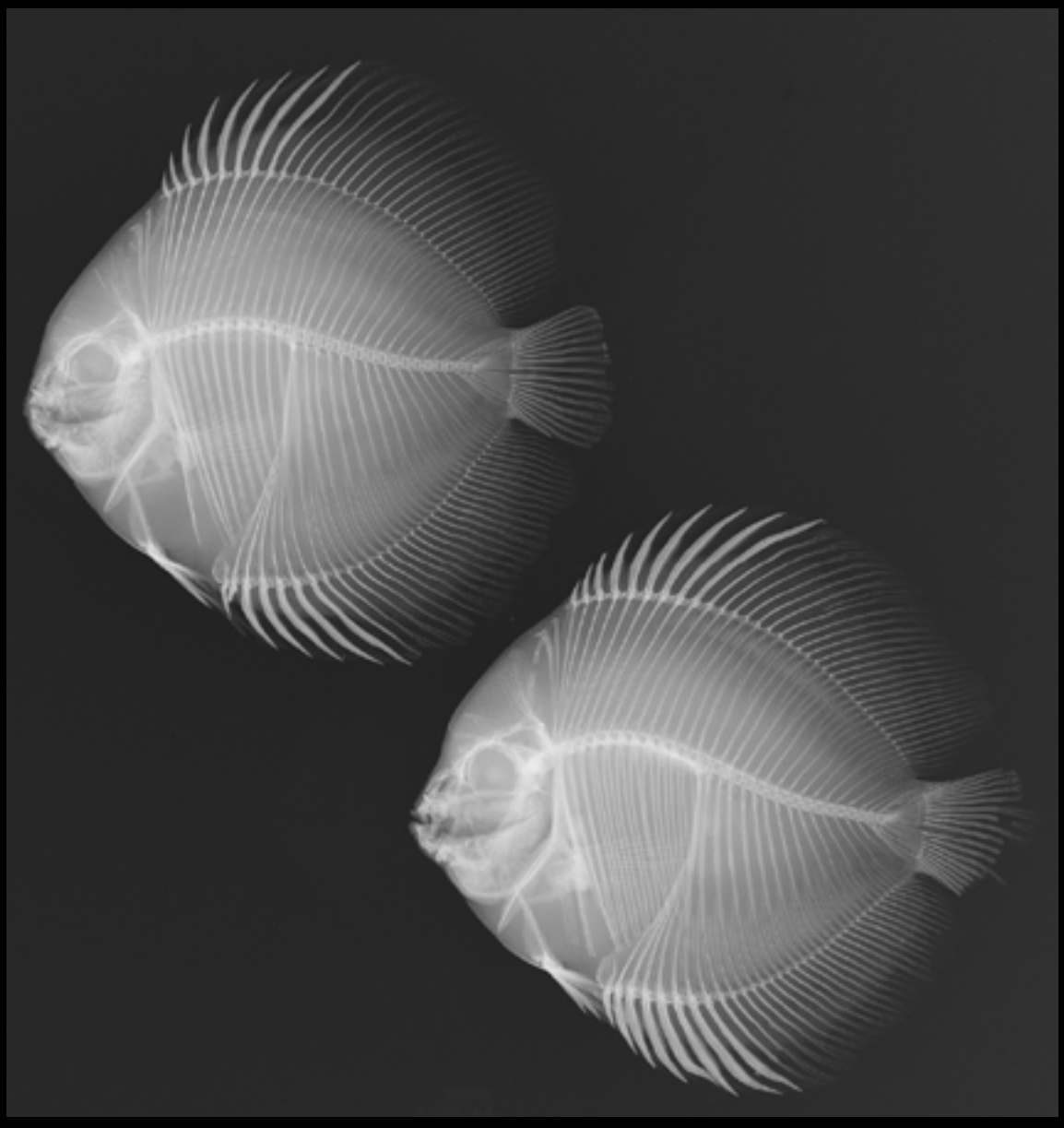
109 Years of Educating Aquarists

AQUATICNews

Brooklyn Aquarium Society Online Newsletter & Magazine

VOL. 1 Fall 2020 No. 4



Virtual Meetings Only Due to COVID

For more information, visit brooklynaquariumsociety.com

Inside AquaticNews

Articles

On the cover: Symphysodon discus willischwartzi Burgress collected by Dr. Herbert R. Axelrod at Rio Abacaxis, Brazil, Amazonas, Brazil, South America. Collection Smithsonian Institution.

Letter From The Editor

As we struggle through the last weeks of 2020, the editors want to express how much we miss the monthly meetings. They are an outlet for our interests in many ways.

My husband Dan and I purchased some small West African cichlids at the November 2019 meeting with the plan to raise them a while and then bring them to another meeting in 2020. But as the meetings got canceled, the fish grew and eventually paired off in our community tank. They tore our carefully placed plants apart and kept the 20 plus other fish hovering on one side of the 90-gallon tank. We moved the cichlids to an empty 29-gallon tank so we could enjoy the aquatic landscape that these cichlids would not allow. We started the year with two tanks and now have four.

Prior to this year, we were Sunday aquarists — buying some fish and try to keep them alive for as long as possible. However, during the lockdown and working from home, we've read about raising aquatic plants and how to keep the water chemistry in balance. This knowledege has increased our enjoyment of our tanks but we are wishing that we paid more atttention to the experts who come to speak at our club — the ones that the Brooklyn Aquarium Society board works so hard to schedule.

In this issue of the **AquaticNews** there is an article on Dr. Herbert R. Axelrod, a familiar name to devoted aquarists. He started Tropical Fish Hobbyist magazine, he was a classical music lover, and spent time in the United States Federal Prison system due to tax evasion. The judge wanted to give Axelrod 3 years in prison, but reduced it to 18 months after considering the requests for leniency from the 50 people who turned up at the court house to show their support for Axelrod.

During Covid's shelter-in-place, we found comfort with our finny friends. Our aquariums have never been so clean. Early this spring, we found a Petco that was open. Surprised to see this small bit of normalcy during the lockdown, we went in. It was empty, save for two employees working the whole store. In contrast to some grocery stores and supermarkets, these shelves were full. Like most of our readers, we headed for the back of the store to the livestock. The tanks were pretty empty but one tank had about 10 or 12 black phantom tetras. We took them all. We didn't think of it as a purchase but a rescue. They'd be safe in our 55-gallon tank.

Ginny and Dan take a selfie at the New York Aquarium before the pandemic.

We are grateful to the board and our regular contributors. We want to convey that Brooklyn Aquarium Society is your club and **AquaticNews** is your magazine. Please share with us and fellow members your memories, experiences and photos!

Ginny and Dan

Join us on Facebook and Meetup
https://www.facebook.com/groups/BAS.FB/

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VOL. 1 Fall 2020 No. 4

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Brooklyn Aquarium Society Board of Directors

The Brooklyn Aquarium Society Inc. is a non-profit organization 501(c) (3) for people interested in the aquarium hobby and the study of aquatic life. The Society meets the 2nd Friday of each month except July and August at the Education Hall of the New York Aquarium at Coney Island, Surf Avenue at West 8th St., at 7:30 PM. Meetings are open to visitors. Refreshments are served.

January's 2021 Speaker

Jan. 11, 2021
Pat Donston
Parasitology of Fishes

Absolutely Fish owner Pat Donston started in the hobby with his first aquarium when he was nine years old. In college, he majored in Zoology, and got his Master of Science degree specializing in fish reproduction.

Upon completion of his Master's degree, Pat worked in a public aquarium teaching docents and volunteers about the biology of invertebrates in the inter-tidal exhibit.

Pat believes aquarium keeping is one of the best educational tools for children and adults to learn more about the oceans and reefs around the world. Learning about the animals one has as pets sparks an interest to become more aware of the environment in which we live. It can bring people closer to a part of the world they may never see or otherwise know.

Saturday Dec. 5, 2020 There will be a presentation to the Potomac Valley Aquarium Society in Virginia at 1:00 pm by Joe Graffagnino. The topic is "Knowledge of Useless Stuff I Acquired."

Remember Our Auctions?

Directions to New York Aquarium

Car Directions: Belt Parkway to Ocean Parkway South (Exit 7S). Take Ocean Parkway approx. 1/2 mile. The NY Aquarium will be on your left.
Subway Directions: Either the Q or F trains to West 8th St., NY Aquarium Station.

Member News

During this period of stay home / stay safe mandate we will be working harder than ever to provide the best online information through our Forum and Facebook page. This will include live streaming of BAS presentations and events as well as the supportive platform for your questions and inquiries.

ANNOUNCING THE WINNERS OF THE FIRST ANNUAL

John Todaro Memorial Writing Program

First Place: Anthony Kroeger for
An Ode to A Man & His Killies: John Todaro

Second Place: David Manuel for
Breeding Fish the Natural Way

Third Place: *Joe Graffagnino for Teleogramma Brichardi*

Future Board Members, **Join the Call!**

We may not be gathering in person, but the board members still meet once a month to discuss club business. We can use your help! There are several board positions currently available and this would be a great time for you to get involved. If you'd like to attend a meeting that's held the 1st Friday of the month, September through June, please notify Steve Matassa at (347) 277-4793 by the Tuesday before the meeting.

Seth Kolker

August 8, 1954 — November 5, 2020

Past President of the Brooklyn Aquarium Society

1989 — 2001

Seth was a dedicated aquarium hobbyist his entire life. While still in his early teens, he was elected to the Brooklyn Aquarium Society's Board of Directors. He was the youngest member ever to be elected in the Society's history. Seth was a visionary in the aquatic industry. His keen eye for the hobby and foresight expanded the influence of the Brooklyn Aquarium Society. In the 1970s and 80s, Seth moved the club into African cichlids, and then marine environments with saltwater fish and corals.

Seth Kolker was the inspiration for many aquarists to try new areas of the hobby. He was patient and resourceful to novices and experts alike. He would go to hobbyist homes to help resolve aquatic problems. Seth loved to auctioneer at aquarium society events. He would travel to neighboring states to assist clubs large and small, donating his time to help the clubs remain financially solvent. Not only could he identify the species that was about to be auctioned, but he understood the species origins, as well as the best foods to bring out the fish's colors and health condition.

Seth increased the Society's membership from as small as six members to close to 500 members when when the club expanded into African cichlids and marine species.

Thank you, Seth, for all you have given to this wonderful hobby.

May God bless and comfort you.

109 Years of Educating Aquarists

FRIDAY, Jan. 8 @ 7:30 PM

THE BROOKLYN AQUARIUM SOCIETY

PRESENTS

Absolutely Fish

Pat Donston

Virtual Meeting!

Normally at The New York Aquarium, Education Hall,
Surf Ave. & West 8th St., Bklyn, NY 11229

HELD THE 2ND FRIDAY EACH MONTH, EXCEPT JULY AND AUGUST

Free Parking • Free Refreshments

$5 Donation for Non-members. Good towards membership that night only.

For Information Visit **BROOKLYNAQUARIUMSOCIETY.COM**

Or Call BAS 24 hr. Calendar of events hotline (718) 837-4455

Club Exchange

By **ALISSA SINCKLER**

GREATER CITY AQUARIUM SOCIETY 'MODERN AQUARIUM' AUGUST 2020

An article "*The natural aquarium does it exist?*" by Dan Radebaugh is an enjoyable read. He talks about wanting to create an environment that is perfect — one that can be replicated to as close to nature as possible. And when it comes to the aquascape of aquariums, if a natural aquarium can be achieved, what would that even look like. He goes into expectations, and the simplicity that would have to be attained. He chose Florida to give his examples, further discussing his findings.

RALEIGH AQUARIUM SOCIETY SEPTEMBER 2020

If you're looking for an informative article, you can begin with *Horseshoe Crabs* by Julie Dunlap, staff writer of North Carolina Wildlife magazine. Dunlap talks about the genetic makeup of horseshoe crabs along with interesting facts, like they aren't even crabs — that they're actually closer to the spider, tick, and scorpion family.

BUCKS COUNTY AQUARIUM SOCIETY 'THE BUCKETTE' SEPTEMBER 2020

Reprinted with permission of the Greater Pittsburgh Aquarium Society from the November–December 2015 issue of Finformation. The article *"Preparing Your Tanks for Winter"* by Jeremy Phillips Michiana Aquarium Society give helpful tips. Phillips gives pointers on how to handle tanks in the winter. For example, power outages that could be harmful to your tanks when snow and ice come — he gives solutions such as using uninterruptible power supplies along with other helpful hints.

GREATER CITY AQUARIUM SOCIETY 'MODERN AQUARIUM' SEPTEMBER 2020

If you're looking for a good story, the article *"My Damsel Distress"* by Stephen Sica, is an excellent choice. This is a story about a diver's passion for photographing aquatic life, and the ups and downs of doing so. He also gives his experience on photographing fast swimming small yellow fish.

NEW JERSEY AQUARIUM SOCIETY 'REPORTER' SEPTEMBER2020

The New Jersey Aquarium Society has a product review on the Hikari freeze-dried tubifex worms that is a high protein aquatic treat. Cost range from $8 to $10. Based on their reporting, it's a cube that helps with serving size. The reviewer liked it more than frozen blood worms that are loose. They say that it gives fishes an activity and a meal at the same time when they're pulling it apart, instead of the bigger fish of just consuming it whole. The company aims for it to be a bio-encapsulated multi-vitamin.

RALEIGH AQUARIUM SOCIETY OCTOBER 2020

"My Green Corydoras (Corydoras Aeneus) Spawning Experience." An article by Kristin Bryant; RAS member, is an interesting article. It gives insight on spawning Green Corydoras from South Africa.

The Wildlife Conservation Society locations
are now open to the public!

All visitors to the NY Aquarium must reserve a date-specific ticket in advance.

Please check https://nyaquarium.com/plan-your-visit for details.

Here's a moment of zen

Tip of the Season

With winter creeping up on us, it's important to winterize your pond. Goldfish and koi can't process food when the temperature drops below 50° Fahrenheit. First, stop feeding them since they are sluggish, and settling in for hibernation. Next, remove and clean your pond filter and water pump. Remove pond debris such as leaves, sticks, etc. Take in all pond lights for the winter to prolong their life. Also, put a pond heater in to allow for gas exchanges during the winter by maintaining a hole in the ice. I would also suggest that before the temperature dips below freezing, turn off and drain all outside hoses and water faucets. The water can turn to ice, expand, and burst your pipe or rip your water hose.

— Joe Graffagnino

From the Wildlife Conservation Society's Digital Archives

Founded in 1895 as the New York Zoological Society, the Wildlife Conservation Society turns 125 years old this year! It was one of the first conservation organizations in the U.S. The Society began with a clear mandate: Advance wildlife conservation, promote the study of zoology, and create a first-class zoo. In fact they have five: the Bronx Zoo, Central Park Zoo, Queens Zoo, Prospect Park Zoo, and New York Aquarium.

Above: Mexican Swordtail / Xiphophorus helleri. One of the better known species of small aquarium fishes which gives birth to active young. The male is distinguished by a long sword-like process on the lower part of the tail.

Dwarf Widow

Phallichthys tico

Joe Graffagnino — BAS

Phallichthys tico

This beautiful little livebearer hails from the upper San Juan River Rio Pizote drainage in Costa Rica. The coloration is yellow to orange body, clear pectoral and anal fins, and yellow coloration edging into the tail and dorsal fins. The dorsal fin is yellow, close to the body, then has a black blotch — the edging on the tip is a bright blue. The males grow to about 1 inch and the larger females can grow to 1 ¾ inches. This is a very attractive fish.

Aquarium conditions should be similar to most livebearers with a ph of 7.0 – 7.5, a General Hardness (GH) of 3 -10 and a water temperature of 73 – 83 degrees Fahrenheit. I noticed these beauty's at a North Jersey Aquarium Society event. There had to be a dozen fish of various sizes in the bag. I was able to win the bag at auction and brought them home. I had a 10-gallon tank prepared with a thin layer of African cichlid sand to maintain an alkaline ph. I added a lot of floating plastic plants, a corner filter completed the new home's furnishings.

I needn't have worried about the floating plants to provide escape paths for new born fry. Three days after I placed the group in the tank, I found a half dozen fry swimming around the bottom. The parents do not bother the fry. These fish will eat anything they can fit in their mouths – crushed flake food, baby brine shrimp and cut up live black or frozen blood worms. They are quite prolific as the tank is filling with fry.

If you want a pretty addition to your home aquarium that is easy to maintain and breed I would strongly suggest this hardy livebearer. And as a bonus it's an easy 5-point Breeder award species. Give the Dwarf Widow a try, you won't be disappointed.

References:

www.AquariumGlaser,de – Phallichthys tico, March 2018

www.fishbase.de - Phallichthys tico

Meet the Breeders

David Manuel
Mountain Minnows / Red Sunset Molly

How did you select the fish you decided to breed? Was it a favorite, a challenge, an accident?
I selected this fish because of hardiness and adaptability to different water parameters.

What should we look for when selecting a pair of fish for breeding?
Specific colors, good finage and no deformities.

How should the fish/plant/coral be cared for? Tank size, ornaments, gravel, lighting, etc.?
Tank should be at least 10 gallons with varied temperature of 76 - 78 degrees for breeding with subdued lighting

Do you keep special water parameters for your fish/plant/coral? ph, temperature, hard or soft?
No special water parameters but heavy plantings of Bush varieties.

How do you care for the fry? Remove the parents or fry, use a separate tank or breeders basket?
I leave the fry with parents in large systems with heavy plants. Smaller systems parents should be removed. I feed them cyclopeze and Hikari fry food until they're larger enough to take crushed flakes.

Scott Peters
Apistogramma ortegai

How did you select the fish you decided to breed?
I chose the species after seeing a photo and being blown away by its beauty.

What should we look for when selecting a pair of fish for breeding? Choosing a pair is very simple, as the species is highly sexually dimorphic. I always use healthy specimens with no deformities for breeding stock.

How should the fish be cared for? The fish were bred in a 20 H filtered with an Aquaclear 30. The substrate was gravel covered with oak leaves. The tanks was furnished with Anubias on driftwood, Java moss, plus coconut & terracotta caves for the fish to use as spawning sites. Lighting was by 2 high output fluorescent tubes.

Do you keep special water parameters for your fish? Water was very soft, GH >1<, 30 ppm TDS, pH 6.3, temp 78 F. The fry are very sensitive to nitrate, so frequent water changes are a must.

How do you care for the fry? The fry were kept with their parents & fed microworms at first, then switched to BBS after a week.

Joe Graffagnino
Corydoras zygatus

Cory zygatus (top) Cory zygatus fry (bottom)

How did you select the fish you decided to breed? Was it a favorite, a challenge, an accident?

I bred Corydoras zygatus for several reasons. I have bred several types of Cory's previously and when I saw a group of these in a fish store's aquarium I knew they were mislabeled as Corydoras rabauti. The fish do appear similar at first glance but there are differences such as body coloration (C. zygatus is paler in skin color and the body stripe is different between the species). I also saw the opportunity to breed a new and rare in the hobby, species. Also, these were wild-caught fish from Ecuador and northern Peru, South America that requires monsoon rains to spawn. With wild fish, timing and conditions mean everything since they may only spawn once each year.

What should we look for when selecting a pair of fish for breeding?

With Corydoras species I suggest two males for every female. These are group breeding species so with a group of six to eight fish the larger, plumper females should be outnumbered two to one. With cichlids I suggest compatibility. Watch your fish and see how they interact with each other. Try to select a pair that swim together or even stay in the same cave or overhang together. It should make it easier for them to mate.

How should the fish/plant/coral be cared for? Tank size, ornaments, gravel, lighting, etc.

The tank size should be compatible with the size and species of the fish. Corydoras are fine in a 10-gallon tank, Oscars should have a 55-gallon tank. The rule of thumb is 1 gallon per inch of fish. Not the size of the fish when you buy them but when they are mature fish. Some fish do outgrow their tank requirements. Not only is this cruel to the fish but they won't breed in a tank that they are too large to turn around in. Ornaments should be a place of refuge for the fish so they can feel safe and comfortable. Gravel - some fish do not need gravel, where others enjoy moving gravel around. Gravel is also good to create a base for good bacteria to grow. Having a couple of inches of gravel to an aquarium creates stability so the ph doesn't fluctuate. Lighting - I would say that less is better. Most fish do not like bright lights. Subdued or blue LED lights are not intrusive and fish with red, blue, and green colors stand out under blue LED lights.

Do you keep special water parameters for your fish/plants or corals? Ph, temperature, hard or soft?

All fish require special water parameters; wild fish more so than domesticated species. Most species will tolerate water variances that are not ideal but they won't spawn in that environment and their colors will be dull compared to water conditions that would be ideal for them. Hobbyists need to research the species of fish they want and prepare their aquariums accordingly. Perfect water conditions will show the fish species at their optimum beauty. Identify and create a perfect water environment for your fish with the correct ph, water hardness or softness, temperature (allow for changes when trying to spawn a particular species. Most important are water changes – it doesn't matter the percentage of water you change but make

it a positive habit on a weekly, bi-monthly or monthly basis and be careful of the new water's temperature so it's not too hot or cold.

How do you care for the fry? Remove the parents, use a separate tank or breeder's basket?

All of the above – Some parents are excellent with their offspring, some have to learn to be good parents and others are just terrible parents. At times I leave the fry with the parents because parents imprint how to be good parents to their babies by having the fry remain with their parents for 10 days. The safest method is to remove the parents to another tank and leave the fry in the tank they were born in for a few weeks to several months. Depending on the tank size the fry may need to be moved within the first few weeks to a "grow out " tank. This type of tank is larger and will accommodate more fry and will allow them to grow faster and not create "runts". If you were doing 25, 50, or 90% water changes in the parent's tank you can only perform 10-15% water changes to fry tanks. Thus splitting them up is better and healthier for both parents and babies.I have used a breeder basket either when I have run out of additional aquarium space (which is often) or when the species fry is tiny or a weak strain that requires additional time in the birth tank to grow and get stronger before being relocated to another environment.

Krobia xinguensis breeding pair

Below, more fish that Joe has bred this year!

Red-eyed Tetras

Tatia musiaca

Texas cichlid fry

Christopher Tam
Centromochlus perugiae and Nannostomus Mortenthaleri

How did you select the fish you decided to breed? Was it a favorite, a challenge, an accident?

When selecting fish, I base most of my decision on a species's coloration and pattern. I absolutely adore fish whose unique colors or patterns pop. I don't give preference how common they are in the aquarium hobby; if they are rare, it is a bonus to me.

However, prior to purchase, I research the preferred parameters of the species I intend to keep. Key points I note are: the preferred water parameters, aggression, adult size, feeding habits, and preferred food to assess if it is feasible for me to keep them. I also try to read any cases of domestic breeding successes for the species for breeding.

I've used this process for both the Coral Red Pencilfish (Nannostomus mortenthaleri) and the Honeycomb Catfish (Centromochlus perugiae) after discovering them on various YouTube channels.

Coral Red Pencilfish
(Nannostomus mortenthaleri)

What should we look for when selecting a pair of fish for breeding?

I do not isolate individual fish for breeding in either species and prefer colony breeding for both. Coral Red Pencilfish are prone to jump after being placed in a new environment, which a risk I deem unnecessary. The Honeycomb Catfish are not aggressive and do not predate on eggs or fry. However, I do look for indicators to assess if a colony is ready for spawn.

The most dominant male in a Coral Red Pencilfish colony will display an intense red color compared to the female. Males also have thinner bullet-like bodies, though females can have a wider chest comparatively. Like other species, the males will often chase the female around the tank and spar with potential rivals by "tail-beating" each other.

Honeycomb Catfish are easy to sex as well, since males have a gonopodium, while the females have a fan. The fish should have a well-shaped belly if they are well fed. Females will grow noticeably larger when full of eggs.

How should the fish/plant/coral be cared for? Tank size, ornaments, gravel, lighting, etc.?

N. mortenthaleri are not sensitive to light. They also don't require a large tank, though I recommend a tight-fitting lid as they jump when newly introduced into a tank. Regarding size, they can be kept in small as a 10-gallon. I prefer a bare-bottom 20-gallon tall tank myself, as the height allows extra space between the bottom of my tank and my spawning mops. This space benefits the colony in multiple ways, as the species requires a lot of cover. This species is territorial and dominant males can be aggressive enough to starve out other Pencilfish while breeding. The extra vertical height also aids in feeding, as they are very slow eaters and require food that stay near the surface or sink slowly. Foods that sink quicker are more likely to rot at the bottom of the tank. Coral Red Pencilfish should be fed crushed flake or live foods (e.g. brine shrimp and daphnia) two to three times a day.

C. perugiae are similar to Pencilfish in that they require a lot of cover. I have success in keeping them in a 20-gallon long bare-bottom tank: the smallest recommended size. They are sensitive to light and prefer caves, which also serve as spawning sites when breeding conditions in the tank are met. Their sensitivity to light also affects their feeding habits. Though they are surface feeders, they prefer eating in complete darkness. A combination of flake food, blood worms, and Hikari Vibrabites keep them happy, though they are not picky eaters. However, they avoid several floating pellets I have tried. The experience has discouraged me from using them.

Do you keep special water parameters for your fish/plant/coral? ph, temperature, hard or soft?

The tap water I use is naturally soft, so it does not require any pH corrections. Once filtered, the water has a TDS of 40 ppm. I do not use heaters in most of the tanks, allowing the temperature to rise and fall with the seasons. They range from 68F in the Winter, to 80F and higher in the summer.

Coral Red Pencilfish predate on eggs but not on fry. To battle this, I leave ten 6 to 7-inch Indian almond leaves to release tannins into the water. I believe this helps brighten the colors of the fish and it also darkens the water, disguising any deposited eggs. Aside from the breeding mops, I also add additional Daphnia moina in the tank if I suspect a couple is actively breeding. Singling out eggs is not an option as I have never viewed a live spawn; the eggs may be too small to spot clearly.

The Honeycomb Catfish do not require special conditions to breed, though I have found success in adding a current to the tank. Once well fed, with ample access to caves, and quality water conditions, the species can spawn within a week.

How do you care for the fry? Remove the parents or fry, use a separate tank or breeders basket?

As I cannot isolate eggs from N. mortenthaleri spawns, I build my tanks to preserve as much as the spawn as possible. Once fry is sighted in the tank, I feed them crushed flake food and brine shrimp two to three times daily. I also change the 30% of the water roughly every two to three weeks. The fry can grow out in the original tank until they are about an inch long; any longer and they risk predating on future broods.

Honeycomb Catfish (Centromochlus perugiae)

Honeycomb Catfish eggs are visible to the naked eye and are ejected out of the cave through natural water movement. I remove them with a turkey baster and keep them in a small tank for observation to prevent tiring the fry. I fill this tank with half new water and half from the original tank. It is heated to at least 70F and kept with minimal lighting. Cold and light stress the fry and may cause loss of spawns. After four to five days, the fry will be free swimming and should be fed brine shrimp after lights off.

Dr. Herbert R. Axelrod: A Familiar Author with A Strange Story

Daniel K. Smith — BAS

As a child, I can't remember any time that I didn't have a fish tank. My introduction into the hobby were two chrome steel-rimmed 10 gallon tanks that were passed down from my older brothers. They lost interest and my father kept the aquariums bubbling hoping either my sister or myself would pick up the baton. I raised my 4-year-old hand.

My father was the gatekeeper to the watery world. He explained the aesthetics of the tropical fish aquarium—zebra danios brought color and motion to the top of the tank, swordtails and neons stayed in the middle and a catfish cleaned up the bottom. He built a wooden tank stand, kept the ancient piston air pump working and showed me the right amount of Tetramin to sprinkle on the surface. While my siblings moved on to other interests, I never outgrew my passion for fish.

I wanted to learn more and more but my father's knowledge was limited. I went from Dick and Jane at school to any book I could get with pictures of fish. The books about tropical fish usually had one name attached to it—Dr. Herbert R. Axelrod.

The photos in the books showed him holding up a bag of fish, motoring down the Amazon river or carefully focusing a camera into a fish tank. He was someone that understood my interest and could be a trusted and reliable source of information.

Many years and fish tanks later I came across a news story with a very familiar name but this guy was into violins and not just any violins—violins made by Antonio Stradivarius. Somewhere in the story it mentioned that he had made his millions in the pet industry. I was surprised to see Dr. Herbert R. Axelrod had done so well selling books about tropical fish. The story said he was donating four Stradivarius instruments to the Smithsonian National Museum of American History. The next time I came across him was his obituary in the New York Times in 2017. I discovered there was a lot more to Dr. Axelrod than Cardinal tetras.

Nov. 4 1993 Axelrod with Tage Billeskow in Aarhus, Denmark

Photo: courtesy Billeskow's Web-uniWers

HERBERT R. AXELROD
June 7, 1927 – May 15, 2017
Born in Bayonne, NJ, died in Switzerland.

It's tough to sort fact from fiction about Dr. Axelrod but most of the stories come from him so at least we can surmise that these accounts are how he wanted to be thought of. Some of his tales from his childhood include swimming 10 miles across Lake Ontario, raising pigeons that were the cause of his family being evicted several times and that he spoke 5 languages by age 5. He skipped out of his High School in New Jersey to attend classes at Brooklyn Tech because the teachers were better.

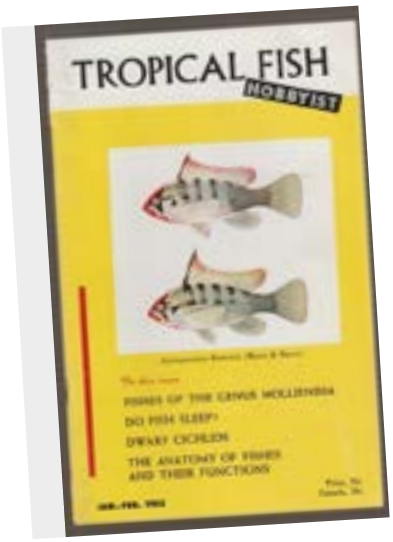
After graduating High School during WWII he entered the Army Officer College Training program and was sent to City College to study engineering. He returned to the Army during the Korean War and served in a M.A.S.H. unit. The legend has it that Axelrod was wounded in the hand and part of his rehab was typing. So he sat down at a typewriter and wrote down everything he knew about tropical fish. This material eventually became *The Handbook of Tropical Aquarium Fishes* (McGraw-Hill 1955). It was during this time that he claimed to have met Japanese Emperor Hirohito and spent a week with him discussing and collecting nudibranchs. There is a whiff of truth to this because the Emperor was very interested in marine biology. The Preface to *The Handbook of Tropical Aquarium Fishes* mentions that Dr. Axelrod met Dr. Tokiharu Abe, who introduced Axelrod to the artist Mitsui Shirao. Axelrod commissioned Shirao to illustrate some fish in *The Handbook of Tropical Aquarium Fishes*. But the Preface makes no mention of meeting the Emperor of Japan.

In the *Mini-Atlas of Freshwater Aquarium Fishes* he relates the story of discovering the Cardinal tetra. Dr. Axelrod claimed while searching for neon tetras in the Amazon in 1956 he caught what he thought were "Giant Neons." He sent some of the fish to Dr. Leonard P. Schultz, Curator of Fishes at the United States National Museum at the Smithsonian Institute. Schultz told him they were a new species of fish and named them Cheirodon axelrodi. The truth was that they were purchased by Axelrod in a local fish store and sent to Dr. Schultz. The Cardinal tetra was actually discovered in Brazil in 1952 by Dr. Harold Sioli. Dr. Sioli was preparing an article for the University of Stanford Ichthyological Bulletin announcing a new fish species. The rules for naming a species are codified under International Code of Zoological Nomenclature (ICZN) and the first published appearance of a new species name gets the naming honors. Axelrod had Dr. Schultz write an article for *Tropical Fish Hobbyist* describing the new tetra and named the fish Cheirodon axelrodi. TFH beat Dr. Sioli's announcement by one day. In the 1960s the genus was changed from Cheirodon to Paracheirodon.

Axelrod on To Tell the Truth September 11, 1966. 2 panelists correctly identifed him. Photo: YouTube

His business, the Tropical Fish Hobbyist empire, was called the General Motors of the pet world.

In the mid-1960s Dr. Axelrod received a lot of attention in popular culture. The May 3, 1965 issue of *Sports Illustrated* contained a 4300 word story titled "The Strange Fish and Stranger Times of Dr. Herbert R. Axelrod." This article contains the wildest Axelrod stories like passing time while driving by multiplying license plate numbers to playing craps in Haiti and rolling 17 straight passes. On September 11, 1966 he appeared on the TV game show *To Tell the Truth*. In his introduction he was described as the world's leading authority on tropical fish and



The first issue of Tropical Fish Hobbyist that appeared in 1953.

that he could identify over 7000 species of fish on sight and has over 2 dozen species named after him. His business, the TFH empire, was called the General Motors of the pet world.

There are many unsubstantiated stories but a few stand out. He was assigned by Walt Disney to capture two black jaguars for *Jungle Cat*, a live-action movie that was released in 1960. He could only capture one so he captured a spotted jaguar, had it tranquilized and a hairdresser dyed it black. There is another story that Winston Churchill consulted with him on goldfish but that seems to have been proven false. There is an account of him corresponding with inmates at Indiana State Prison. Alexrod heard lifers kept guppies strapped to their bodies in test tubes and had maintained generations of the fish for over 30 years. Believe these stories at your own risk.

In 1997 he sold TFH Publications to Central Garden & Pet Company for $70 million. Part of the agreement was that Axelrod was to receive a portion of the profits. He sued saying they were understating his share of the profits. He won the case and received $3.7 million. But Central Garden & Pet countersued claiming that he fraudulently overstated the value of the TFH Publications and were awarded $20.1 million.

What is true about Dr. Herbert Axelrod is that he had a passion for classical music that matched his passion for tropical fish. With the money he earned from his fish farms and publishing business he was able to collect antique string instruments by Amati, Stradivari and Guarneri. It was the musical instruments that got him in trouble. Not only did Axelrod embellish stories—he also embellished numbers.

He donated a collection of musical instruments to the Smithsonian and took a $50 million tax deduction. But experts valued the instruments far less and in 2004 he was charged with tax fraud. Instead of appearing in court he fled to Cuba (he also wrote *A Guide the the Selection, Care and Smoking of Fine Cigars* [TFH 1997]) and then he headed to Austria where he had citizenship status given to him by the Austrian government. He was arrested getting off the plane in Germany and eventually sent back to the States where he was convicted of tax fraud and served 18 months in prison.

I would be remiss if I didn't mention his philanthropic activities and there were many. He gave generously to institutions of the arts such as the Metropolitan Opera, NJ Symphony Orchestra and many others. The Axelrod Cancer Research Fund at Jersey Shore University Medical Center is in his name. Axelrod Institute of Ichthyology at Guelph University received his collection of fish fossils collected in Brazil. He helped establish Project Piaba in Brazil. *(See page 25)*

My path has taken me a long way from the 10 gallon tanks with a piston pump. I now have a 90 gallon with a wifi-enabled LED light and keeping fish my four-year old self could only dream of. But Dr. Axelrod seems to be disappearing. Although he was mourned by many after his death, his crime has overshadowed his legacy. Sadly, the TFH magazine website and the masthead in the printed magazine makes no mention of Herbert Axelrod. He said in 2005 that "I will be remembered as someone who disrespected the law." But to those of us raised on his books he will be remembered for the 16 species of tropical fish named after him.

Author's note—The source of the more outlandish stories for this article came from multiple sources that often conflicted with each other. The information about his tax fraud case and his philanthropic work came from the New York Times articles and obituary.

TheShrimpFarm.com is the place to go for freshwater shrimp. The owner is Ryan Curtis, with a new mailing address: 2401 East Washington St, STE 200 A2, Bloomimgton, Il 61704. Visit the Aquarium Shrimp Forum http://theshrimpfarm.com/forum/index.php to ask questions, talk to other shrimp nuts and discuss everything related to Freshwater Aquarium Shrimp.

Malaysian Trumpet Snails Good or Bad?

MALAYSIAN TRUMPET SNAILS (MTS) are considered pests by some and a welcome, sometimes needed, addition by others. Are they good or bad for a Dwarf Shrimp aquarium? I think they are great, and here are a few reasons why:

Some don't like them because their population can explode and they are livebearers so it is hard to control population spikes, but if they are not over fed the population will stay in check and there are some great benefits from having them.

GREAT CLEAN UP CREW

MTS are very good at cleaning up uneaten food. They will come out from under the substrate when it is feeding time and join the shrimp while they are eating. Anything that is not eaten by the shrimp, the MTS will get!

GREAT HEALTH INDICATOR

MTS populations will spike when an aquarium is over fed. A population can quickly become an infestation when an aquarium is cared for poorly, and this is a great indication of overall tank health.

SUBSTRATE OXYGENATION AND MIXING

MTS spend most of their time under burrowed into the substrate. This keeps the substrate mixed up, not allowing the substrate to settle into divided levels, and they also allow oxygen to get to the bacteria found in the substrate!

Photos: Daniel Smith

The Project Piaba Story

This non-profit organization studies and fosters an environmentally and socially beneficial home-aquarium fish trade.

Deep in the heart of South America's Amazon Basin, in one of the most pristine and bio-diverse areas on earth, the Rio Negro stretches nearly 2300 kilometers before joining the Amazon itself near the Brazilian city of Manaus. The world's largest "black water" river, its unique tea-colored water is home to nearly 800 species of freshwater fish, many of which are found nowhere else on earth.

One of these fish—the Cardinal Tetra (Paracheirodon axelrodi)—gained worldwide attention after its discovery in the 1950's. With its vibrant blue-and-red coloration and peaceful schooling behavior, it immediately attracted the attention of the growing aquarium hobby. Over time, an entire industry grew up in the region based on collecting, transporting, and exporting these and other tropical fish species to supply home aquariums, mainly in the US and Europe.

Over time, this trade grew to have a major impact along the Rio Negro—especially in the municipality of Barcelos, a few days by boat upriver from Manaus. This small town became a major transportation hub for tropical fish collected in the numerous riverside villages throughout the municipality (which is roughly the size of the state of New York) before they were sent to Manaus for export. In this rural, largely undeveloped region, tropical fish collecting and trade was a major source of employment, with estimates that up to 60% of the cash incomes in Barcelos were derived from this trade.

For 25 years, Project Piaba has been at the forefront of research into this unique fishery and its impacts. In 1989, the first major study of the region was initiated by University of Amazonas (UA) and the National Institute

Santa Isabel do Rio Negro Village Photo: Mike Tuccinardi OFW

of Amazon Research (INPA) in Manaus. The results of this study demonstrated not only the enormous importance of the home aquarium fish trade to the region but also indicated that it was largely sustainable—much to the surprise of the scientists involved and this work was first published in 1992 by Dr. Chao.

Subsequent research confirmed this and continued to expand our understanding of this artisanal fishery—even suggesting that fish collection, and the livelihoods it supported, were responsible for the preservation of forest and river habitat. And so, in 1991, Project Piaba was officially founded by Dr. Ning Labbish Chao, then a professor at University of Amazonas to continue to research this fascinating, environmentally beneficial fishery. In 1995, Project Piaba became an official non-profit with incorporation as Bio-Amazonia Conservation International, a 501 (C) 3, non-profit founded by Dr. Chao and Scott Dowd with a non-profit business name of Project Piaba (little fish).

Since its inception, the Project has continued to sponsor and collaborate on research, making the Rio Negro home aquarium fish trade one of the most well-studied fisheries of its kind. Visit our publications page for a full list of scientific papers and popular articles written about this fishery and Project Piaba's role in it.

Unfortunately, in the years since the Project was founded, the Rio Negro's home aquarium fishery has come under pressure from many outside factors and today is nearing collapse. These market forces have the potential to decimate the fishery if we were not to work on studying and fostering the fishery.

These market forces include and are not limited to:

- Perceptions of wild-collected aquarium fish in general
- Fishery infrastructure challenges and seasonal availability due to natural flood and drought seasons
- Pressure from Brazil's endemic species which are being farm-raised outside of Brazil
- Animal rights groups and legislation

pressures

• The story of the Rio Negro Fishery is a complex story to tell

Should this fishery disappear, it is likely many of the positive impacts it has had on the region—including the protection of critically important habitat—will be lost. Locals who rely on sustainable fishing to support their families will be forced to find other means of subsistence, which will mean an increase in slash-and-burn agriculture, illegal logging, and urban migration.

With the goal of alleviating this preventable collapse and preserve the fishery—along with the socioeconomic and environmental benefits it provides—current Executive Director Scott Dowd brought together a group of stakeholders in 2012 to broaden Project Piaba's scope beyond research.

Today, with our partners in the zoo and public aquarium industry, the global home aquarium fish trade, and with researchers and conservationists worldwide, we are working to help ensure that this fishery has a viable future.

Learn more about how we're doing this in the tab on this site titled, "What We Do."

https://projectpiaba.org/

Making a Living — the Piabeiros of the Amazon

A piabeiro is the name given to the fisherfolk of the Amazon River region. The piabeiros gather aquarium fish, such as the colorful cardinal tetra, cichlid, and small catfish. Together, these fish are a part of a group called piabas, the Portuguese word for aquarium fishes. Piabeiros export these piabas all over the world for the lucrative aquarium fish trade. While exporters and wholesalers profit most from the catch, there is unequal compensation for local fishermen who use the river's resources for the livelihoods.

Yellow tangs, damselfish and Blueface angel.

Taking the Plunge to Saltwater

Steven Matassa — BAS

I'M SURE MANY OF YOU fresh water hobbyist have thought of getting into salt water, but are afraid of the challenge or even the expense. Well, it's not as hard as you might think or as expensive, although, it is a little more expensive then fresh water, but it's definitely worth it. If you have kept fresh water fish successfully, you can keep salt water fish. All you need is a little knowledge, before taking the plunge. I will try to walk you through this as simple as possible, and as cheap as possible. The cheap part probably caught your attention, right — then let's give it a shot.

First you need a tank, try to go with the biggest your budget and space can handle. The bigger the tank the more stable the water parameters will stay. I know it might not seem like it, but the larger the body of water, the easy it is to maintain parameters like temperature, pH, ammonia, nitrate, etc., as they will fluctuate less in a larger tank than a smaller one. If something does go wrong like a bad heater, a dead fish or any other issue you will have more time to correct the problem. For example the temperature will fall less in a larger tank then a smaller one if the heater fails in a given time. The same hold true for other water parameters. The difference in time could

A diamond goby on top of a green hairy mushroom. Photo: Steve Matassa

mean you catching the problem in time or losing your fish.

I would say at least a 30 to 40 gallon aquarium would be a good tank to start out with, larger if you can. Ok, so you have your tank, and a strong stand to place it on. Don't under estimate the stand, or the floor below, remember by the time you are finished — between the water, tank, stand, and what's inside — you could be in the range of 9 to 10 pounds per gallon. It's important to level the stand first. Leveling a stand is sometimes overlooked, and definitely should never be overlooked. Stands that are not level will put uneven pressure on the tanks seams, and on the stand which can cause tanks to leak, or even worse — break. Even a 10 gallon tank is a lot of water to have on your floor, imagine a 40 gallon. One of the things I do is to place ½ inch Styrofoam between the stand and the tank. This might not seem logical, but the Styrofoam will take up any slight imperfections in the stand to avoid those leaks. I use this method on any tank over 30 gallons and have had great success with this method.

Location is important. Never locate the tank in front of a window, or in direct sunlight, unless you like the look of green water.

The next thing is lighting. If your setting up a fish only tank with base rock or coral skeletons, you don't need much light. A fluorescent strip light is fine. The same type of lighting you use for your fresh water is fine. If you are using live rock then you will need more light, but we will stick to the easy and cheaper setup for now, so a fluorescent light is fine. Make sure to use the right lamps, not a fluorescent lamp from your house fixture, or basement. I like to use a 10,000k lamp as it has a nice bright white color for my salt tanks, but this a matter or taste. There are other choices, as long as they are aquarium lamps. Using the wrong lamps can promote algae blooms, so make sure to purchase the proper lamps. The proper lamp will also show off your fish's true colors. Replace the lamps about every 12-18 months, even though they are still working they are not producing the proper spectrum, and that can promote algae blooms.

Next is filtration. In my opinion wet/dry's or refugiums are the best, but are not mandatory. Good canister filters work well, or even a hang-on power filter. When buying a filter, purchase one that is rated for a little bigger then what you need. I find that most manufactures tend to overrate their filters.

The filtration does not stop there; a protein skimmer is probably the most important piece of equipment in your salt water tank. This is where you shouldn't skimp on cost. Forget about those 29 dollars specials, because they don't work well, and you will be constantly adjusting or cleaning

them. I have tried that route and went through several, it will end up costing you more in the long run. When they say you get what you pay for, they were talking about skimmers. I don't want to say you have to have a skimmer, but it will clean your water better then any kind of filter can. It will remove dissolved solids, the other filter media can not. I will never recommend setting up a salt water tank without one. When you see the muck that a good skimmer collects from your tank you will understand why most hobbyists consider it to be the most important piece of equipment in the tank. It is not a substitute for water changes, but without it you will be doing a lot more water changes.

A friend can give you a start by letting you take a couple of cups of their sand, and some filter media from an established tank.

A good submersible heater is next about 3-5 watts per gallon is needed. This depends on the location of the tank, how well the room is heated. It is a good practice to use two smaller heaters instead of one larger one. The chance of two going bad at the same time are very unlikely.

You will also need a good **quality salt mix and a hydrometer.** For those of you who don't know, a hydrometer is a tool used to measure the amount of salt you have to put in your tank. It measures salt by the specific gravity, or salinity. In a fish only tank I like to keep my salinity at 1.019- 1.021, where in a reef I would keep it at 1.024-1.026. We will get into mixing the salt later on.

Substrate is another thing to consider. The substrate used in salt water is different then fresh, as it must help to maintain the pH at around 8.3. You can use sand, crushed coral, dolomite or even live sand. In my opinion live sand is the way to go, but it is more expensive. If you are looking to save money you don't have to use all live sand; you can mix it with regular sand. A bag or two of live sand will help speed up the cycle.

Cycling a salt water tank used to mean waiting about 6-12 weeks, lucky there are ways to speed that up now. One of the ways is live sand and/or live rock. Another method is a friend can give you a start by letting you take a couple of cups of his sand, and some filter media from an established tank, obviously this is cheaper then buying live sand. Using a bag of live sand, or a starter kit from a fellow hobbyist will cut the cycle time down dramatically. Using the live sand method it should take less then a week. I have cycled a tank in as little as 4 days this way. While the tank is cycling you will need to monitor the water perimeters with a test kit. A quality salt water test kit is another piece to this puzzle. It must test for high pH, ammonia, nitrite, and nitrate. These are the tests you will be performing every few days while the tank is going through its cycle. There are many reputable manufactures out there that have reasonable priced kits.

I will now explain what it means to cycle a tank. When you first fill your tank with fresh water, your ammonia nitrite and nitrates are undetectable, but with the addition of live stock this will soon change. You will start to build up beneficial bacteria — this is a good thing. These levels will start to rise, even to the point of maybe killing off your starter fish. For this reason you should buy inexpensive, hardy fish like damsels. Once the tank has finished its cycle, you can remove the damsels if you don't want to keep them, and put in what fish you do want. More delicate fish probably won't make it through the cycle, so you will be wasting your money.

At first, monitor the tank levels with the test kit every few days. The levels will rise, and then fall back down. When they come down, your cycle is over, and you can start to add more fish — but slowly. Your ammonia, and nitrite should always be at 0, but it is normal to have some nitrates present. Most fish-only tanks will have a nitrate level between 20 ppm and 50 ppm, and this is fine. Of course the lower the better, but this is a good indicator for water changes, so keep and eye on them.

When adding more fish you may see some rise in these levels, like a mini cycle. This is nothing to be alarmed about, it's normal. If it rises too much, doing a water change will bring them down. The more you stock the tank the harder it will be to keep your nitrates down, so not resisting that one more cute fish might just be the breaking point. So don't overstock your

tank. Adding fish one or two at a time is a good practice, so be patient. It will be worth the wait.

Once you go through your cycle you can hook up your protein skimmer. It might take a week or two for it to start skimming properly. If a skimmer is working correctly, the collection cup should be filling with dark color waste. If it is filling with clear or light color liquid it needs to be adjusted.

We now have all the pieces to the puzzle, so we can start putting them together. We can begin with water. You have a couple of choices here. One is you can use tap water, two is deionization water, and third is reverse osmosis water. Listed in order of the cheapest first, we will go with tap water since we are not using live rock here. If you were using live rock you should use either deionization or reverse osmosis water instead. If you can, I recommend buying either a deionization filter or reverse osmosis filter, because will lesson the chances of algae blooms.

One of the biggest differences in salt water to fresh is your water changes. In fresh adjust the pH, temperature, dechlorinate and your ready. With salt you have to adjust the salinity also. We do that by mixing the salt and water in a bucket, never in your tank, once it's started. The water must be the same salinity as your tank before adding it to the tank. I find a good way to mix the salt is with a power head in a bucket. It takes about 15 minutes to fully dissolve; if the salt is not fully dissolved you cannot get a true reading. Another thing to keep in mind is top-off water. When water evaporates, the salt does not, so you add fresh dechlorinated water only to top off evaporation, just adjust the pH and temperature.

After your tank has been aerating for 24 hours we can add the salt. It is always better to add too little salt then too much salt. If you are too low you add more salt if you are too high you have to drain some water and add fresh water to bring it down. Adjust using your hydrometer, and we are ready for the next step.

The live sand or starter culture from a friend's tank goes in next. You might want to shut the filter off for a couple of minutes, so the sand can settle. Filter for awhile and you're ready!

See, not as hard as you thought! Now the next step is the fun part — going to the fish store to buy fish. Now remember, think hardy and cheap for your starter fish. I know the selection can sometime be confusing. It is always good practice to do a little research first. Find out what fish are compatible, and also hardy. Saltwater fish are more expensive then fresh, so choose carefully.

I find it a good practice to always ask the pet store to feed the fish before buying them, to make sure they are eating. Never buy fish that refuse to eat because they may never start. This of course will only mean a slow demise. Any good pet store will have no problem feeding the fish for you, if they do — then you are in the wrong store. Good luck, and enjoy. See you at the next auction!

SETTING UP A TANK IS AS EASY AS 1, 2, 3!

FIRST PICK YOUR SPOT, level your stand, and place the tank on top. PREPARE THE SUBSTRATE by rinsing it, and placing it in the tank (do not rinse live sand or it will not be live sand anymore).

Set up the tank the way you want, and FILL YOUR TANK A COUPLE INCHES SHORT OF THE RIM, (to leave room for the salt) hook up your filter.

If you are using live sand, or live rock you will have to add it after the water is mixed, and oxygenated. Do not add it to fresh water or you will kill it off. Check for leaks, and start up the filter. DON'T PLACE ANY MEDIA FROM AN ESTABLISHED TANK IN THE FILTER SINCE THERE IS NO SALT IN THE TANK YET.

Hook up the heater, and let it aerate for 24 hours. THE NEXT DAY YOU CAN PUT SALT IN, and adjust using your hydrometer. Keep in mind the TEMPERATURE AFFECTS THE HYDROMETER READINGS, so adjust your temperature first. I try to maintain the temperature around 76 degrees Fahrenheit, but a few degrees either way is not crucial. I DON'T USE THE SKIMMER UNTIL THE TANK FINISHES ITS CYCLE as it will only slow the cycle down.

c Newsletter #242 April 24, 2019

10 Useful Aquarium Products You May Not Know Exist

Waterproof Gloves

All aquarists need to reach inside their aquarium for cleaning and maintenance. Sometimes, reaching into an aquarium results in an injury. Dangers include venomous fish, poisonous corals, spiny fish or sea urchins, sharp rocks, and aggressive biting fish. The Coralife Aqua Gloves are aquarium safe waterproof gloves that are 28 inches long. These gloves will keep your hands protected and dry when working in your aquarium.

On the flip side, you may have contaminants on your hands and arms that are problematic for your aquarium inhabitants. The Aqua Gloves will prevent the transfer of the contaminants into the aquarium.

Buffing Supplies

If you have an aquarium you will scratch the tank's viewing panes. If you have an acrylic tank these scratches can be buffed out and repaired. Lifegard Aquatics makes a Scratch Removal Kit that uses progressively finer abrasive sheets to buff out scratches. Novus makes a series of abrasive liquid products that can work to smooth out and remove scratches.

Calibration Solution

Have you ever tested your aquarium and gotten results that were way off? Calibration solutions help to insure that your testing is accurate. Two Little Fishies AccuraSea is a hydrometer and refractometer calibration solution that will ensure your salinity is being measured correctly. The Milwaukee Instruments Calibration Solutions can be used to calibrate your pH or ORP tester or meter.

Grabbers

In deep aquariums it can be very difficult to reach the bottom of the aquarium for maintenance. If a rock or decoration needs to be moved or a coral falls off the rockwork then you may not be able to reach to the bottom with your hands. The Coralife AquaTongs come in 3 lengths and allow you to reach the deepest parts of your aquarium. The tongs are water and rust resistant, unlike many grabbers used for other purposes.

Magnetic Clips

If you have had an aquarium for any extended period of time you know that suction cups will eventually fail. An upgrade to suction cups is magnet mounts. You can swap the Zoo Med Mag Clip Magnetic Suction Cups for the suction cups on most heaters, canister filter returns, and airline tubing.

Feeding Rings

A common problem when feeding your fish is that the food goes everywhere and much doesn't get

eaten and simply rots away. The Two Little Fishies MagFeeder uses a ring at the water's surface to contain floating fish foods so that less food is wasted.

Aquarium Safe Glass Cleaner

The outside aquarium glass gets dirty with smudges, finger prints and drip streaks. You can clean the glass with regular glass cleaner, but you risk the chemicals getting into the tank and poisoning your animals. Even organic glass cleaners contain ammonia, which can be extremely toxic to fish. Kent Marine Acrylic/Glass Cleaner-Polisher is safe to use around tanks and makes your glass sparkle.

Grounding Probes and GFCI

Aquarists invest a lot in the lives of their fish, but they also need to invest in their own lives. Using a GFCI outlet with a grounding probe will help reduce your chance of electrocuting yourself. The grounding probe senses free current in your aquarium and shuts off the power if it is detected. The GFCI outlet will detect when current is leaking out of the circuit. This will occur when current "leaks" into your body and automatically turns the power off. You can use a Reef Octopus Titanium Ground Probe or Shock Shield GFCI Plug Adapter to add these protections.

Heater Module

If you have an aquarium you most likely use a heater. Heaters in the aquarium are ugly and can even burn some delicate fish and invertebrates. The Lifegard Aquatics Heater Modules will accept most heaters and allow you to use them in line where the heater is away from your animals and water flow constantly moves past the heater to ensure effective heating.

Surface Skimmers

In many aquariums an unattractive oily film collects at the surface. Even with strong filtration this film stays at the surface and never flows into the filter. A surface skimmer is a device designed to suck this oily waste off the water's surface so the filter can remove it. You can use stand alone skimmers like the AquaTop SSK-65 Aquarium Surface Skimmer or skimmers that attach on to your existing filter, such as the ista Multi-Surface Skimmer.

Marineandreef.com, 1536 W. Todd, Suite A102,
Tempe, AZ 85283
Toll Free: 877.878.9349. 8-11:30 AM & 12:30-4 PM
Mountain Time on Monday through Friday
Email: sales@marineandreef.com*

Joel Antkowiak - ACLC
Reprinted from *Tank Tales* October 2011 the publication of
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Bunch Plants

Bread 'N Butter

Egeria densa

One of the first groups of plants that the beginning hobbyist encounters is the 'bunch plants'. Although many of these plants are unrelated botanically speaking, they are usually grouped together. They consist of plants that are sold as a small bunch of stems or cuttings that readily put down roots in their new homes. Often times they are weighted by a strip of lead, which should be removed. The most common of these is *Egeria densa*, or anacharis. It can also be found under the names *elodea* and Brazilian waterweed. This is a quickly growing species when offered moderate lighting between 55˚-77˚F. It will also thrive while free floating.

The temple plants of the genus *Hygrophila* are also easily grown. Species commonly encountered include *H. polysperma, H. corymbosa* along and *H. difformis. H. difformis* is also called water wisteria and has bright green, ferny looking leaves. *H. polysperma* has leaves that are lanceolate and about 1-1 1/2" long, and can be green or pink depending on the variety. *H. corymbosa* has larger leaves than *H. polysperma*, perhaps to 3" in length.

Other plants that are commonly sold in bunches include *Rotala* sp., *Cabomba* sp., *Ambulia* sp., *Ludwigia* sp., and *Bacopa caroliniana*. These are all a little more difficult to grow than anacharis

SWORD PLANTS

These plants are usually used as show pieces in a display aquarium. The sword plants hail from the genus *Echinodorus,* and most will grow 12 - 18 inches high. The exception to this rule is the pygmy chain sword, *E. tenellus*, which will produce a carpet of small 3-4 inch high plants and is a great foreground plant.

The sword plants are some of the many plants available for aquarium cultivation that have multiple growing forms in their natural state. Most commonly, plants that are sold in stores have been grown emersed, or with their roots in water and the plant above the water line. Rarely will you find a plant available commercially that has been grown submersed, or entirely under water. This is because the availability of carbon in the atmosphere is much greater than it is in water. Therefore, the plants will grow more quickly if grown emersed. Sword plants are among the many species that will benefit greatly from the use of carbon dioxide injection in the aquarium, especially if given ample lighting.

There are about 26 known species of sword plants. Of these, there are about a dozen that are commonly available the most popular of which is the Amazon sword plant. Two species are sold under this name. *E. bleheri* and *E. amazonicus*. Others most commonly available are the radican sword - *E. cordifolius*, the ruffled sword - *E. major*, and the rosette sword - *E. parviflorus*.

E. bleheri

Anubias basteri

ANUBIAS SP.

Plants of the genus Anubias prefer low light conditions and are sometimes difficult to keep because algae tends to grow on their leaves faster than they grow, which is about 1 leaf per month or sometimes less. They are characterized by broad, sturdy, dark green leaves that come in many different forms. The Anubias like to be attached to a piece of porous rock or driftwood, as opposed to burying their roots in the substrate. Most often encountered are various forms of *An. barteri*, including *An. barteri var. coffeefolia* and the diminutive *An. barteri var. nana*.

APONOGETONS

These plants are fully aquatic. They may live in temporary still or flowing waters and will survive a dry period in the form of a bulb or tuber. The bulbs are sometimes available in stores as 'mystery plant' because the distributer lost track of the species of some bulbs and sells them as a 'see what you get' fun type of marketing strategy. They are generally easy to grow and require period of dormancy. Of course, there are always exceptions to every rule, and the exceptions are usually the most desired species. Such is the case with the *Aponogetons*. The lace plants are more difficult to cultivate, and only the most experienced aquarist will be able to grow their lace plant multiple times from a single bulb. The Madagascar lace plant, *A. madagascariensis*, may also have a tendency to grow algae on its leaves if the lighting is not correct, filling in the lattice structure of the leaf.

More common and much more easily grown species include *A. ulvaceus, A. boivinianus, A. crispus, A. natans*, and *A. rigidifolius.*

Aponogetons boivinianus

Vallisneria americanus

THE GRASSY STUFF

There are two genera of plants that are almost grass-like that are very popular for the aquarium. The genus *Sagittaria* contains about 30 species and is closely related to the sword plants. It consists of mostly amphibious marsh plants that have long stemmed aerial leaves that are oval to arrow shaped. But the smaller submerged species have more linear shaped leaves and multiply rapidly by runners in the aquarium. *S. subulata* is the most common of these in the aquarium, whereas its larger cousin, *S. platyphylla*, is also frequently encountered.

The second and more popular grassy plant genus is *Vallisneria*. The corkscrew val, *Val. tortifolia*, is a medium sized plant with bright green tightly twisted leaves. *Val. spiralis* is similar in size but a slightly darker green in color and not as tightly twisted. Very popular as a background plant is jungle val, also called giant val. Most are usually sold as *Val. gigantea*, but are actually *Val. americanus*. The leaves of this plant can reach 3 feet in length and it will quickly form a living wall at the rear of your aquarium.

THE CRYPTS

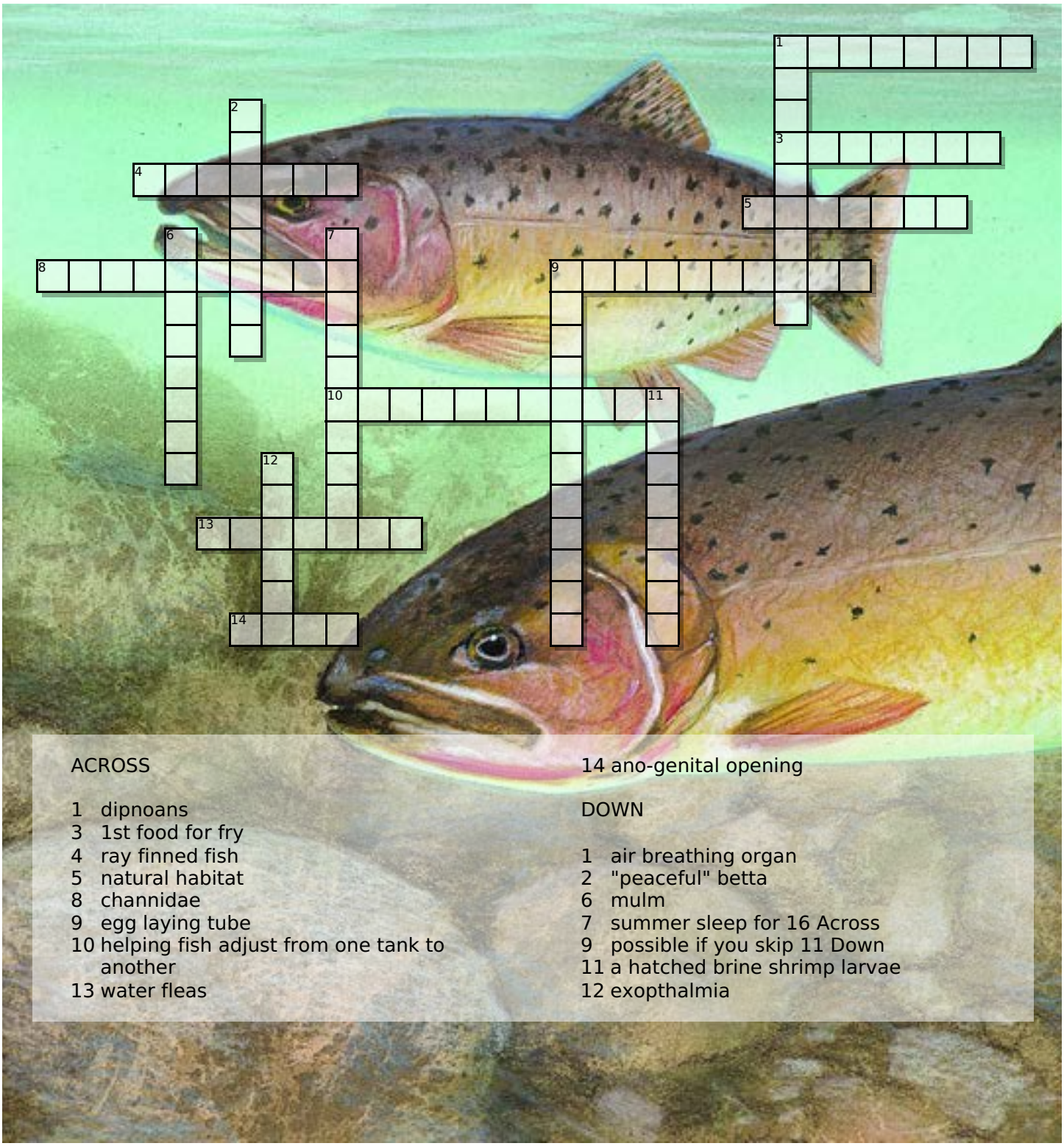
The water trumpets from the genus *Cryptocoryne*, or 'crypts', are also usually available in the emersed grown form, but can be found in the submersed form as well. There are about 60 or so species of Crypts, though maybe a dozen that are readily available. The name 'water trumpet' is a reference to the shape of the inflorescence, or flower, of the plants. These plants will generally grow well in lower light conditions than the sword plants. They will also stay a bit smaller, maybe 8-12 inches as a general rule, though some species will grow larger.

Some crypts have been cultivated into different color forms that can make interesting additions to the aquarium without having to provide different growing conditions. The most common of these is *Crypt. wendtii*, which comes in red, bronze, green and the "Mi Oya" variety that is a reddish bronze color. Other common crypts are *Crypt. blassi, Crypt. lutea, Crypt. lucens, Crypt. pontederifolia, Crypt. moehlmann*i, and the more grassy species such as *Crypt. balansae, Crypt. spiralis,* and *Crypt. retrospiralis*. Several other species are occasionally seen in the hobby. A phenomenon that frequently occurs trans-planted is called 'crypt melt'. It may take a newly planted crypt up to 30 days or more to generate new leaves once it has melted. All emerse grown plants will go through the melt, and sometimes submerse grown forms. Crypt melt makes it imperative that, when buying crypts, the root stock is healthy. Crypt melt is so common that some growers are now shipping crypts without leaves to save on shipping cots, and because the leaves will be lost anyway.

Cryptocoryne wendtii

Crossword Puzzle Challenge

By MARTY KARFINKEL



ACROSS

1 dipnoans
3 1st food for fry
4 ray finned fish
5 natural habitat
8 channidae
9 egg laying tube
10 helping fish adjust from one tank to another
13 water fleas
14 ano-genital opening

DOWN

1 air breathing organ
2 "peaceful" betta
6 mulm
7 summer sleep for 16 Across
9 possible if you skip 11 Down
11 a hatched brine shrimp larvae
12 exopthalmia

Crossword Puzzle Answers on page 45

BROOKLYN AQUARIUM SOCIETY PRESENTS

THE JOHN TODARO MEMORIAL WRITING PROGRAM

GOAL

To honor Editor John Todaro and encourage original writing about the aquarium hobby.

PROGRAM CRITERIA

The writing program is on a fiscal year basis (July 1 – June 30).

There is no limit on the number of articles submitted by an author. However, only three (3) articles will be evaluated by the committee for the writing awards. Judged by the committee and if a tie the Chairperson's decision is final.

Articles on breeding fish will have a dual submission in both the writing program and the Breeders Award Program. The writing program is open to members and non-members of any age.

The committee will evaluate and vote on each article based on the following criteria:

- The originality of the article (past year, plagiarism of another's work or previously published articles will be disqualified).
- Clarity of species and subject matter.
- Depth of research – research articles to include citations and footnotes to sources if any.
- Use of scientific names for fish, plants and corals.
- Spelling
- Artwork &/or photos submitted with the article will receive extra points if related to the article or deduct points if incorrect or unrelated to the article.
- If an originally submitted article is printed by another club, within the same year as the same article is submitted to BAS, the author will not be penalized.

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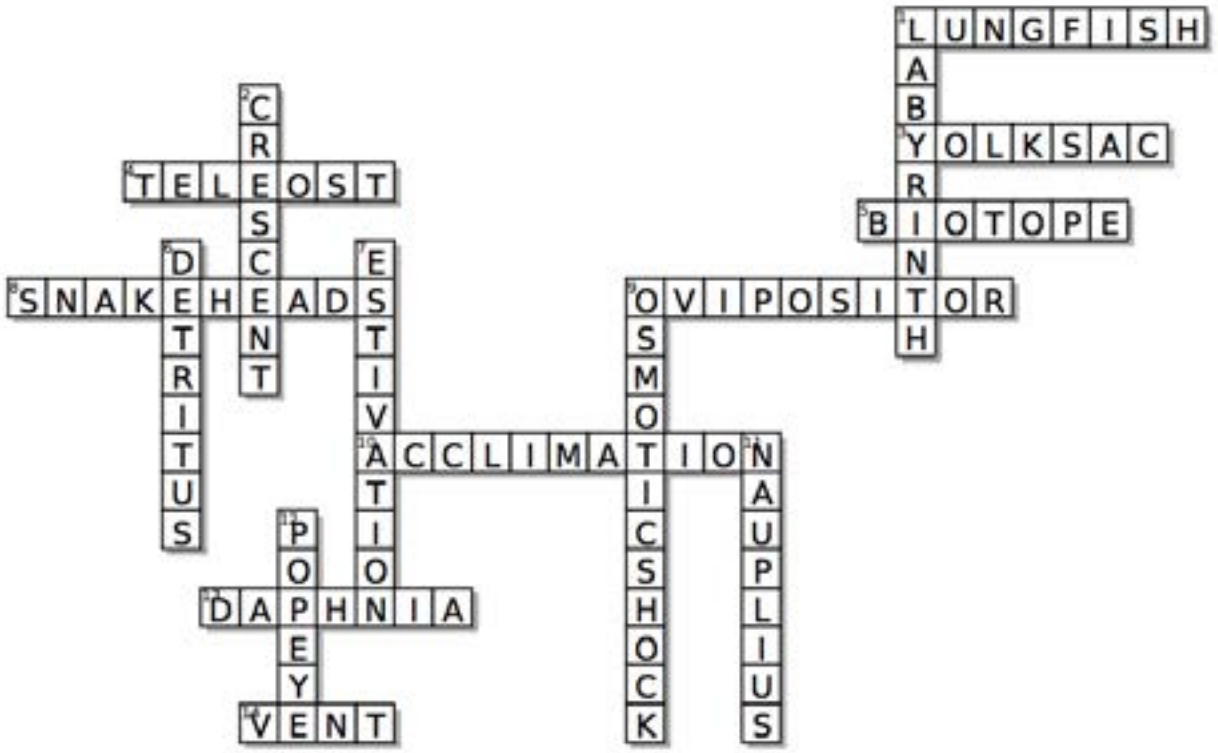
Crossword Puzzle Answers



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Meeting reminder! All members receive flyers announcing speakers via email, keeping members up to date.

Calling all writers, artists and photographers! All members will have the opportunity to submit articles, photography and illustrations for publication in the **AquaticNews!**

BAS is on-line at BASNY.ORG. You'll find up-to-date information about our monthly events, links to other aquarium societies in the US and stores, manufacturers and related aquarium sites. We have an on-line library with downloadable articles. We have our own BAS forum, where you can interact with other freshwater, marine or reef members and post free hobby-related classifieds where members sell and trade fish, corals, plants and equipment.

BAS Hotline: For the latest information call the BAS 24 hour Hotline 718 837-4455 for event and inclement weather information. If you need advice on fish keeping, breeding or where you can find rare or hard to find fish, you can often get help calling the Hotline. Help from the Hotline is always free.

Volunteer: The Brooklyn Aquarium Society is an organization run by volunteers. Without them there would be no BAS. Volunteers help set up events, write articles, coordinate projects, assist and work on committees, help at auctions and meetings. Join in, help, learn and have fun doing it. Call Steven Matassa, President (347) 277-4793.

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