109 Years of Educating Aquarists

AquaticNews

Brooklyn Aquarium Society Online Newsletter & Magazine VOL. 1 Spring 2020 No. 2



Monthly meeting at The New York Aquarium's 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



Inside

AquaticNews







3

President's Message

4

Upcoming Speakers

7

T-Shirt contest Submit your designs to be the next BAS shirt!



Join us on Facebook and Meetup

https://www.facebook.com/groups/BAS.FB/ https://www.meetup.com/Brooklyn-Aquarium-Society/

Articles

17

Teleogramma Brichardi Joe Graffagnino – BAS

19

Sexing Neocaridina dwarf shrimp Ryan Curtis— BAS

20

African Biotypes in Your Home part 4—Agua Fria River Guinea *Anthony P. Kroeger – BAS*

22

Earthworm snacks

John Todaro – BAS

23

Transporting Corys lan Fuller – BAS

25

How Giant Sea Spiders May Survive in Warming Oceans – *NYT*

27

Catappa / Catalpa Denis Vardaro – BAS

28

Zebra Danios Anthony P. Kroeger — BAS

31

Xenotoca Lyonsi Joe Graffagnino – BAS 8

Donators New Members & Renewals

10

National and Regional Events

12

Club Exchange

13

NYA Notes Virtually meet the new octopus in the Spineless Wonders exhibit via the live cam!

14

Tip of the Season

35

Meet Our Sponsors

President's Message

THIS IS A DIFFICULT

President's Message to write. Our events for March, April and May have been canceled, along with every other club in the world. The Coronavirus has impacted economies worldwide, hundreds of thousands of people have died and it isn't over yet.



We're not the only ones who are struggling to modify the way we have meetings. It's important to us and our members to create a semblance of balance in our lives. I think that whenever this is over, our lives will have been greatly altered.

I pray that you stay safe and healthy until this pandemic passes. Please continue to be mindful about socially distancing and practice common sense. Life will return to a different type of normal eventually.

JUNE 12, at 8:00 pm, we will have a live virtual meeting with our scheduled guest speaker Chad Clayton from Reed Mariculture. Chad's topic for the evening is, "Copepods are changing the face of aquaculture." All current and up to date members will be getting an email with directions on how to watch this informative and educational live video presentation. There will be FREE parking if you leave your vehicle where it is! There will be FREE refreshments when you get them from your refrigerator! I hope you enjoy the presentation from the comfort of your own couch!

BAS has a new program that we want all to participate in. In memory of longtime BAS Editor John Todaro, we have created the John Todaro Memorial Writers Award. This is open

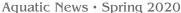
to members as well as non-members. Articles can be any size, they can include drawings or photos for extra points. You can enter 3 articles for judging by the BAS committee. Not only will your story or artwork get published in our newly designed **Aquatic News** publication, there are prizes too! 1st prize is \$50, 2nd prize is \$25, and 3rd prize is \$15. There will be several Honorable Mention prizes of \$5 if the articles submitted warrant special attention (all payments are in BAS Bucks). It starts now and ends on August 31. To enter please email your submissions to Ginny at basny.editor@ gmail.com. Submission(s) must be received by 8/31/20. So get busy writing that article that you've been putting off! Now's the time to share your knowledge, epic battles, unusual marine life stories, or simply your experience with your fish and why you love them.

If you want to see different speakers and learn about a variety of aquatic systems, fish, plants, and marine life, please let me know. The elected officials of the Brooklyn Aquarium Society are here to serve YOU! Please let us know what you want and why, because it would be helpful to everyone.

Please visit and patronize our sponsors, most of them are open during this pandemic because our pets must eat too. It goes full circle: by helping them, they are also helping you as hobbyists and everyone is helping the Brooklyn Aquarium Society — so help us, help you!

For more info, please call our BAS Hotline at (718) 837-4455, or visit our modern website at WWW.BROOKLYNAQUARIUMSOCIETY.ORG

Steven Matassa **President**





Editor: Virginia Cahill

Associate Designer: Daniel Smith

Copy Editor: Kay Martin

Freshwater Shrimp Editor:

Ryan Curtis

Marine Editor: Open

Plant Editor: Open

Catfish Editor: Ian Fuller

Illustrations: Norman Doughty

Chris Giam, Julia Noonan, and

Shelly Sacks

Contributing Writers:

Ryan Curtis

Al DiSpigna

Kathy England

Ian Fuller

Jeremy Gay

Christian J. Heede

Anthony P. Kroeger

Marine and Reef.com

Kendra Pierre-Louis

Alissa Sinckler

Helen Thompson

John Todaro

The On-Line Journal

of the Brooklyn Aquarium Society

VOL. 1 Spring 2020 No. 2

AQUATICA is published on line four times a year by the Brooklyn Aquarium Society. Original articles may be reprinted by other non-profit organizations, provided proper credit is given to the author and AQUATICA, and two copies are sent to the Exchange Editor. Transcriptions of lectures may not be reprinted without written permission of both Aquatic News Editor and the Speaker. A notice of where original AQUATICA articles have been published should be sent to the BAS Exchange Editor; P.O. Box 290610, Brooklyn, NY 11229-0011.

AQUATICA will exchange publications with all interested societies. If we do not receive your publications for three consecutive months, we will assume you no longer wish to exchange and your club may be removed from our mailing list.

ALL CORRESPONDENCE CONCERNING THIS PUBLICATION SHOULD BE SENT TO:
• Editor: Virginia Cahill 10 Ocean Parkway, B6, Brooklyn, NY 11218

You can submit articles to the Editor by mail, or E-mail to: basny.editor@gmail.com.

Brooklyn Aquarium Society Board of Directors

OFFICERS

President Steve Matassa

1st Vice President

Gennady (Gene) Kogan

2nd Vice President

Marie Licciardello

Treasurer

Open

Corresponding Secretary

Daniel Smith

Exchange Editor

Alissa Sinkler

Membership Chairperson

David Manuel

Sergeant-at-Arms

Lita Goldberg

Recording Secretary

Open

Web Master

Bernard Deren

Publications Editor

Virginia Cahill

BOARD MEMBERS

William Amely

Denver Lettmen

Kay Martin

Nick Martinez

Leon Perry

Wayne Sinckler

Bob Strazzulla

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.

Spring Speakers

JUNE 12 Chad Clayton ~ Copepods are Changing the Face of Aquaculture ~ This is a Virtual Meeting due to the Coronavirus.

MEETINGS IN JULY & AUGUST TBD

Fall Speakers

SEPTEMBER 11 Harry Faustmann *Live Foods* ~ Followed by an auction of marine fish, aqua-cultured corals, freshwater fish, plants & dry goods.

OCTOBER 9 *Giant Fall Auction* Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods.

NOVEMBER 13 James Perrenod — *Advanced Discus Keeping*. Followed by an auction of marine fish, aqua-cultured corals, freshwater fish, plants & dry goods.

DECEMBER 11 Holiday Party ~ Members, their families & friends BAS award presentations.

JANUARY 11, 2021 Pat Donston — *From Absolutely Fish*. Followed by an auction of marine fish, aqua-cultured corals, freshwater fish, plants & dry goods.



David Manuel '15

CHECK ALL TIMES AND DATES BEFORE ATTENDING

TBA (To be Announced) means the Society has not gotten a confirmed speaker. Before attending a meeting, please check www.brooklynaquariumsociety.com or call the Society's hotline (718) 837-4455 for more information on late changes to the speaker or cancellation due to inclement weather. Meetings are always held on the second Friday of the month. There are no meetings in July or August.

2020 Spring Speakers

Rescheduled

Robert Stark
Successful Strategies
For Reef Keeping

Born in Queens, New York, Bob Stark has been a marine aquarist for

50 years. He graduated from the Southampton campus of Long Island University with a Bachelor of Science degree in Marine Biology. For the next 27 years he worked as a chemical engineer at his family's chemical specialty company, ESV Company Inc. During this time, he privately maintained marine aquaria, getting caught up in the revolutionary wave of reef aquariums in the mid 1980's when the series of articles by George Smit were published in Freshwater and Marine Aquarium Magazine. In 1995, Bob formulated and sold B-Ionic Calcium Buffer, the first easy to use, ionically balanced two part calcium and alkalinity additive which could be manually dosed directly to the aquarium without



having to be slowly dripped to avoid a dangerous pH spike, like kalkwasser. Next, heformulated B-Ionic Magnesium, the first ionically balanced magnesium additive.

In 2003 his simplistic approach to reef keeping was featured in Mike Paletta's book "Ultimate Marine Aquariums: Saltwater Dream Systems and how they are Created" as the "Bare Bones Reef."

In 2006 Bob and his brother Rich ended the chemical specialties company and formed ESV Aquarium Products Inc. to exclusively manufacture and sell products for the aquarium industry. Here, he formulated the 4 component B-Ionic Seawater System to address the problems of impurities and inconsistencies in single component, dry synthetic seawater mixes. Bob's major interest is to extrapolate research from marine science journals into the design of simplified closed marine ecosystem models with applications in energy efficient aquaculture and to provide a simple, economical methodology to help beginning reef aquarists entering the hobby.

June 12

Chad Clayton

Copepods are changing the face of aquaculture

Chad grew up in Indiana and was inspired by Jacques Cousteau to pursue his passion for all things marine. He started his first marine aquarium at age 14 and kept everything from anemones to an octopus and jellies, as well as some species of fish. In 1992, he left Indiana to attend Florida Institute of Technology in Melbourne, Fla. where he became interested in the emerging field of Aquaculture.

In early 1999, he worked with the Indiana Department of Natural Resources, Fish & Wildlife Division living at a fish hatchery in Avoca, IN. From there, Chad went to Washington University School of Medicine in St. Louis, MO in a zebra fish (Danio rerio) laboratory as a husbandry and molecular biology technician position.

This is where he learned the art of in vitro fertilization

and keeping genetic lines of zebrafish alive and healthy for research purposes. After working at the lab he went to Oceans, Reefs & Aquariums in Florida, where he learned the process of culturing and selling multiple species of marine fish.



After 4 years at ORA, he left for Kona Blue Water Farms in Kona, HI on the big island. He was the Assistant Hatchery Manager overseeing copepod culture and larval rearing.

In 2008, he moved to Santa Cruz, CA with his future wife, Sara, and landed a job at Reed Mariculture in the San Jose area. At Reed Mariculture, he's involved with product development, copepod culture, trade shows, biosecurity, sales, and educational presentations.

During the past 20 years, he has successfully cultured 37 species of fish and invertebrates including marine invertebrates, freshwater fish, and marine fish.

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.



We're taking submissions through the summer with the winner announced at September's General Meeting and Auction.

THE PRIZE:
you get to see
your design
printed on a shirt!

TO ENTER:
email submission(s)
by 8/31/20 to
basny.editor@
gmail.com

BAS'S AND T-SHIRT DESIGN CONTEST

PAST WINNERS











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 s treaming of presentations and events of interest as well as the supportive platform for your questions and inquiries.

WE HAVEN'T FORGOTTEN YOU.



It's with great sadness that
we announce

Wayne 'Juice' Stephenson has
passed away on Wednesday, May 13
from a heart attack.

He was a member of BAS for many
years and a great guy!
Our condolences to his family.



BAS would like to thank Seth and Gloria Kolker for their generous donation to our club.

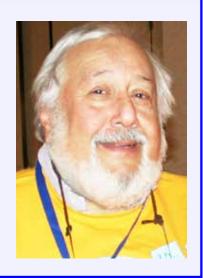
ANNOUNCING

John Todaro Memorial Writing Program

Goal: To honor John Todaro and encourage original writing about the aquarium hobby,

Please see more details on the full page flyer on page 29.

The prizes will be paid in BAS Bucks. 1st Prize - \$50, 2nd Prize - \$25, 3rd Prize - \$10 and Honorable Mention - \$5.

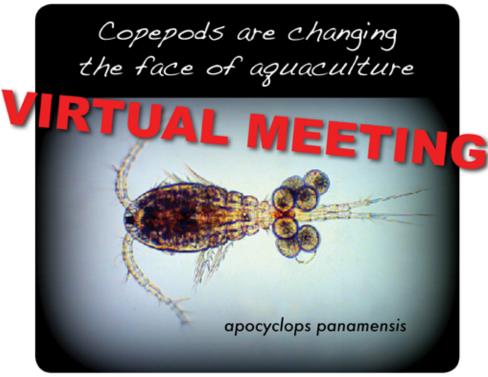




109 Years of Educating Aquarists

FRIDAY, JUNE 12 @ 7:30 PM THE BROOKLYN AQUARIUM SOCIETY PRESENTS

Chad Clayton



AUCTION AFTER THE SPEAKER FEATURES:

Marine Fish, Aqua-cultured Corals, Freshwater Fish, Plants & Dry Goods Auction

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

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.

National Society Events

WHAT TROPICAL FISH EVENTS **HAVE BEEN CANCELLED OR POSTPONED?**

AMERICAN LIVEBEARER ASSOCIATION CONVENTION

AMERICAN CICHLID ASSOCIATION CONVENTION

INTERNATIONAL BETTA CONGRESS ANNUAL

AMERICAN KILLIFISH ASSOCIATION CONVENTION

NORTHEAST COUNCIL OF AQUARIUM SOCIETIES

ANNUAL TROPICAL FISH WEEKEND

Plus...

MOST LOCAL CLUB SHOWS, AUCTIONS, MEETINGS AND WEEKEND EVENTS.



Marcin Smok '15

National Society Events Con't

Before going to any event check their web site for up-to-date information.

BIG APPLE GUPPY CLUB

Meets: the last Tuesday each month (except Jan, Feb, July, and August) @ 7:30 to 10:00 pm. Alley Pond Environmental Ctr., 228-06 Northern Blvd., Queens, NY. Info: Donald Curtin (718) 631-0538 or twindon1 @aol.com

BUCKS COUNTY AS

Meets the 1st Thursday of the month except August. Meetings start @ 7:30pm doors open @ 7:00 pm, at the Churchville Nature Center, 501, Churchville Lane, Churchville, PA. Info: bcasonline.com

CAPITAL CICHLID ASSOCIATION

Meets the 2nd Saturday of each month* at: John F. Kennedy High School, 1901 Randolph Road, Glenmont, MD 20902 Doors open at 1:00 and the meeting starts at 2pm. *We do not hold regular meetings in March, July, August, or December.

DANBURY AREA AS

Meets the 4th Friday of the month @ 7:30 pm at Laura Sprain Memorial Cornerstone park, 1 Fair St. Carmel, NY 10512. Info: Rich Litsky (845) 228-0372 or Joe Masi (845)-896-4793 or daas@northeastcouncil.org

GREATER CITY AS

Meets the 1st Wednesday of the month @ 7:30 pm at the Queens Botanical Garden, except for January and February.

Info: Claudia Dickinson at: ivyrose@optonline.net or (631)-668-5125, or www.greatercity.org

Greater Hartford AS

Meets 4th Tuesday of the month @ 7:00 pm at the Lutz Children's Museum, 247 S. Main St., Manchester, CT. Info: (860)-643-0949

Jersey Shore AS

Usually meets the 2nd Monday of the month at the South Wall Fire Rescue Co., 2605 Atlantic Ave., Manasquan, NJ. @ 7:30 pm.

Info: www.jerseyshoreAS.org; or (732)-859-5595 or mws71@yahoo.com

LONG ISLAND AS

Meets the 3rd Friday of the month at SUNY Stony Brook's Maritime Science area, Room 120 in Endeavor Hall (After you enter building, take hallway on the right. Room 120 is first room on the left) on the State University at Stony Brook Campus, Stony Brook, NY 11794. Doors open @ 7:30 pm, meeting starts @ 8:00pm. Info: www.liasonline.org

LONG ISLAND REEF ASSOCIATION

Meets the 1st Friday of the month @ 8:00 pm at Acan Lighting, 75 Austin Blvd, Commack, NY 11725. Info: http://www.LongIslandReef.org

METROPOLITAN AREA KILLIFISH ASSOCIATION

Meets 4th Wednesday of the month @ 8:00 pm at the Meadowlands Environmental Center, Lyndhurst, NJ. Info: SLMACK@compuserve.com

NASSAU COUNTY ASA

Usually meets the 2nd Tuesday. of the month at Molloy College, 1000 Hempstead Ave., Rockville Centre NY @ 8:00 pm. General meetings open to the public.

Info: Mike Foran (516)-798-6766, or at info@ncasweb.org

NORTH JERSEY AS

Meets the 3rd Saturday of the month 12:30 pm sharp at the Clark Public Library Union County just off the Parkway at exit 135. Info: www.njas.net

NORWALK AS

Meets the 3rd Thursday of the month @ 8:00 pm at Earthplace, The Nature Discovery Center, 10 Woodside Lane, Westport, CT. Info: Norwalkas.org

PIONEER VALLEY AS

Meets 1st Tuesday of the month at The First Congregational Church, 20 Lathrop St, West Springfield, MA @ 7:00 pm. Info: Jacob Guinasso, jguinasso@pvas.net or Martha Morris, martha morris@hotmail.com. or pvas.net

RALEIGH AQUARIUM SOCIETY

Meetings take place on the first Thursday of each month @ 7:30PM at the NCSU Vet School.

Info: RaleighAquariumSociety.org

TROPICAL FISH CLUB OF BURLINGTON

Meets the 2nd Thursday of the month at the VFW Hall, 73 Pearl St., Essex Junction, VT. Meetings start @ 6:30 pm. Info: David Banks at dbanks@together.

TROPICAL FISH SOCIETY OF RHODE ISLAND

Meets the 3rd Wednesday of the month at the Rhode Island Society for the Prevention of Cruelty to Animals. 186 Amaral Street, Riverside, RI 02915. Doors open around 7:00 and meetings start at 7:30. Info: www.TFSRI.net.

Club Exchange

By ALISSA SINCKLER

BUCKS COUNTY AQUARIUM SOCIETY

"The Buckette" April 2020

Reprinted with the permission of Missouri Aquarium Society from September to October 1917. The article *One man's trash... Is another man's treasure.* An aquabid how-to by Rick Renfro touches on the topic of how the things we choose to put in our tanks is part of an ecosystem and caring for every single thing in our tanks is essential down to the plants and snails. That every part of our tanks is important and being a part of this type of hobby should mean giving things we no longer believe we need to people who do.

KITCHENER WATERLOO 'FISH & TALES' APRIL 2020

An article *The Tale of Two Stans* by Chris Kioetstra is a good read on how to make more space for tanks and a step-by-step on how he went about doing so (with pictures), along with his inspiration and results.

NORTH JERSEY AQUARIUM SOCIETY 'REPORTER' APRIL 2020

Has interesting articles on fish such as: Dr. Paul's fish of the month: Hyphessobrycon elachys tetra. M. Weitzman 1985. A brief breakdown of this species of tetra. With a focus on their color patterns, their water chemistry, and their breeding practices.

Tropical Fish History Guppies and Beyond by Bob Larsen. A story timeline from 1957 to 2020 through memories on how this award winning guppy breeder hobbyist begin dabbling in tropical fish and guppies. Teleogramma brichardi by our own Joseph Graffagnino. An article on how the author reacted to seeing and handling the teleogramma brichardi. He recounts from meeting this fish, to identifying the genders, to making a tank home for them, and finally to breeding them.

YOUNGSTOWN AREA TROPICAL FISH SOCIETY MAY 2020

Has an interesting article called *Corydoras pygmaeus "Pygmy Cory"* by Brian LaNeve.

An article on his experience with this species of fish. The author includes how to identify the genders, the feeding and conditioning for them, how to set up a tank for them, their water conditions, how to spawn them, and how to take care of their babies.

NORTH JERSEY AQUARIUM SOCIETY 'REPORTER' MAY 2020

An article titled *Denizen...The Great Pike Livebearer* (*Belonesox belizanus*) by Chuck Davis is a breakdown of this fish species through his experiences with them. He discusses their sizes, their tank mates, and water conditions.

MISSOURI AQUARIUM SOCIETY'S 'THE DARTER' APRIL 2020

Has an article Super Shelly's by Brett Wimer. This is a reprint from Federation of Texas Crab Societie's Fish Tales newsletter 2019. This article gives tips and tricks on how to breed "Multie's" a small African shell-dwelling cichlid, their environment, species description in aquariums and what makes them so unique.

Enjoy the sights and sounds of the NYA with 3 live webcams, while you stay safe at home.

https://bronxzoo.com/virtual-zoo/live-cams

NEW YORK AQUARIUM

Transport yourself to Ocean Wonders: Sharks! and you'll be mesmerized by sharks, sturgeon, and rays. Or enjoy a sneak peek of our newest exhibit, Spineless, featuring the giant Pacific octopus.



SEA CLIFFS



OCEAN WONDERS: SHARKS!



SPINELESS

Look at the new Giant Pacific Octopus! He's got a live cam too!

Tip of the Season



We suggest that hobbyists perform this weekly:

Check aquarium heaters, pH and verify fish quantity and health weekly to prevent nasty surprises. Verify heaters are working correctly, that the pH is right for the type of fish in the aquarium and that nothing died that would possibly kill any tank mates.



COVID-19 & The Ornamental Fish Industry

By ANTHONY KROEGER

Note: This article was written in April 2020

We are all aware of the havoc the COVID-19 virus has wracked on people's health, hospitals, and the economy, but how has it affected the hobby and ornamental fish industry nationwide and internationally? In a couple of words, it is basically shut down.

As of this writing, most stores have shut down. All non-essential businesses and pet and aquarium stores are classified as non-essential. True you can still buy online but both the retail and wholesalers (for aquarium stores) are shut down. Likewise so are Florida fish farms because airlines are not flying fish currently, so the supply chain is dried up.

It is expected that once the stores are allowed to reopen, airlines will accept live cargo again and social distancing restrictions are eased so that the fish industry in the United States will slowly return to normal, hopefully by Christmas 2020. Such is not the prognosis for overseas exporters. There the damage is much worse and long-lasting.

Many major fish exporting countries around the world have government-imposed social distancing restrictions more intensive than the United States. Included among them are countries such as Peru, Brazil, Nigeria, India, Philippines, Sri Lanka, and others. In such places, fish exporters are wiped out. They cannot hold live products for 6-8 weeks with the hope of shipping it then. Nor do most even have the holding capabilities to do so. Thus, even though paid for the product, they must trash it because it is worthless and expensive to feed. This results in massive financial losses.

I know of two major freshwater exporters in Brazil who have permanently closed due to COVID-19. Expect to pay more for fancy plecos when the markets reopen, along with most other wild-caught Brazilian fish. In Africa, most exporters are on life support. If restrictions do not end soon Congolese exports will collapse. Items such as synodontis angelicus and wild Congo tetras species will simply be unavailable in the market until new exporters open up shop there.

The damage is not limited to freshwater. Marine suppliers are drastically affected too. Especially hard hit are exporters in the Philippines and Sri Lanka that are sources for marine staples such as clownfish and Coral Beauties. As with Brazil and Congo freshwater, due to the severe social distancing restrictions in these countries, an exporter shakeout is occurring. After restrictions are lifted there will be fewer fish exporters and many of them will be financially weak. So expect to see marine fish prices to increase, possibly dramatically, by years end. We are lucky in the United States because our economy is resilient and strong and we will recover. Let us hope our overseas exporters, the industry and the hobby does the same and soon.

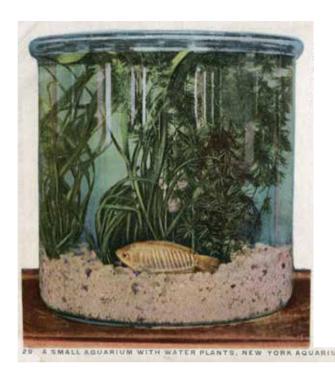
Happy Fishkeeping!

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.

This small aquarium, and the text below, is from a vintage postcard in the WCS's digital archive. It encouraged people to set up their own tanks.



How to care for an Aquarium. Use pure water, which should not be changed; it is better to introduce water plants, which will supply oxygen for aeration. Put fine washed gravel or coarse sand in the bottom to hold roots of the plants. Keep the aquarium in the light but not in sunshine; it should be in a room where the temperature is uniform, 50 to 60 degrees. A ten-gallon aquarium is easier to manage than one of smaller size. Do not crowd the specimens; a few small fishes will thrive better than several large ones. A rectangular or round aquarium is better than a globe. Feed moderately as waste food will foul the water. It is best to buy prepared foods. Put in a few fresh-water snails to eat green moss off the glass, and a couple of tadpoles to help clean up waste food. Take out refuse with a rubber syphon. Destroy fishes which become diseased. Get an aquarium book and study important details; the New York Aquarium can supply "The Care of Home Aquaria" for 25 cents a copy.

Teleogramma Brichardi

By JOE GRAFFAGNINO — BAS



S SOON AS I SAW THIS FISH I fell in love with it. It resembled a wingless dragon. These slender goby like cichlids hail from West Africa. They are found in the rapids of the lower Congo River. I found it interesting that in the wild they live in fastmoving and turbulent water, but in an aquarium, they prefer a calm water environment. A friend mentioned that someone had these fish in Queens and was selling fry. I contacted him and purchased five 1 ¼ inch fry. I was told to separate the fry because when they reach this size they fight to the point where they kill each other. I brought them home and placed them into a 15-gallon tank with many caves and rocks throughout the tank for shelter. They would

eat pellet food but not flakes. They took live or frozen worms. They were a secretive fish; always hopping from place to place to grab food and jump back into hiding again.

In a few weeks, I was able to sex the group. When not in breeding colors both males and females have vertical stripes of white and black, however, the female has a broader white stripe on her dorsal fin that goes to the tail fin where it gets wider. She also gets a red belly. When in breeding colors the male and female turn black and the female's white stripe appears brighter as does her red stomach area. The males grow slightly longer and have more girth to their bodies than the females. Males can grow to 4 ¾ inches. I had three females and two males. I









had to separate the third female when the other four partnered. These fish pair bond for life and they spawn in caves. They generally lay 10-30 eggs on the cave ceiling. The water environment is 6.0-7.5 ph, DH from 2-10 and temperature from a low of 68 degrees to a high of 84 degrees Fahrenheit.

I separated the two pairs by moving them into different 15-gallon tanks. I used pleco caves (low, 4-6 inches deep and 1 inch high) and clay caves but they preferred the pleco caves. The courtship dance was interesting to watch. The female would dance around in front of the male. At times lay her head or body on top of his and jump away if he tried to bite her. She would twist her body and have her red belly in front of the male's face and then hop away, trying to get the male to follow her. Eventually, he would get the idea (yes, fish males are slow to take hints even when shoved in their face) and follow the female

into the cave. The pair would lay the eggs on the ceiling and fertilize them.

Both pairs spawned within days of each other. When the fry left the safety of their cave there was 11 fry from one spawn and 21 from the other. The parents were excellent with their babies. I fed the babies live baby brine shrimp and tiny pellets. When the babies reached 1 ½-2 inch they started fighting amongst each other so I moved them to a 10-gallon tank that I filled with java moss. I added a corner box filter and plenty of rocks and caves. There was enough java moss that the fry could not move freely and this stopped any loss of babies. I strongly suggest to get yourself these beautiful and interesting West African cichlids and enjoy their antics.

References: www.fishbase.de www.TheCichlidRoomCompanion, Mary Bailey, 1999 The Shrimp Farm.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, Bloomington, 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.

Sexing Neocaridina dwarf shrimp

If you're interested in breeding dwarf shrimp, there are a few requirements that have to be met. Your water quality should be high, the shrimp need to be well-fed and old enough to reproduce. The most important thing, though... you need to have males and females!

ow do you tell them apart when they're so small? If you're struggling to sex your Neocaridina shrimp, keep reading.

TYPICAL FEMALE NEOCARIDINA CHARACTERISTICS

Female Neocaridina shrimp have a few unique characteristics that you can use to identify them.

Some are very conclusive (like the presence of eggs), while others provide a good indication but aren't 100% proof of female-ness on their own.

SIZE. As with many of the species we keep in our aquariums, female dwarf shrimp are considerably larger than males. You can easily tell them apart by size if there are no juveniles in the tank.

COLOR. This won't be of much use when trying to sex very high grade Neocaridinas, as both the males and females will often feature opaque

coloration. In lower grades though (like regular cherries) you'll often see a large difference in color between females and males. The females are notably brighter and their colors are more solid, while males are more see-through and their coloration can be sparse.

BELLY. Female dwarf shrimp carry their eggs safely tucked between their back legs (swimmerettes), where they are protected by their extended belly plates. This means they have a much rounder 'belly' than males, in which the body plates form a straight line to the tail rather than a curve. Their swimmerettes are also more

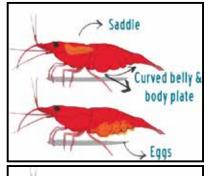
well-developed and you are usually able to see them better than in males Additionally, females the first body plate is notably rounder: it almost forms a perfect circle.

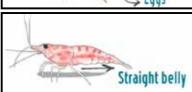
SADDLE. If a female's exoskeleton doesn't feature extremely opaque coloration, you might sometimes be able to see a saddle. This yellowish spot behind

the head contains eggs before they are moved to the swimmerettes, which makes for a clear indication that a shrimp is female.

EGGS. Can you see greenish to yellowish eggs tucked between a shrimp's back legs? Congrats, it's definitely a female! Just don't confuse eggs with the dreaded 'green shrimp fungus', which is a parasite that also attaches to the swimmerettes and can be confusing for beginners. Eggs are relatively large and round, while

fungus is thinner and more elongated.





TYPICAL MALE NEOCARIDINA CHARACTERISTICS

We can be pretty short about typical male characteristics, as most identifying features were already discussed above. If you're looking for a male shrimp, look for the following: notably smaller than females, often (but not always) less opaque coloration, non-rounded belly which makes the back of the body appear thinner and no sign of a saddle or eggs. Some hobbyists also swear by antennae length, as males might have longer antennae than female, but this can be difficult to see.

Anthony P. Kroeger — BAS

HOW TO SETUP

African biotopes in your home

Part 4

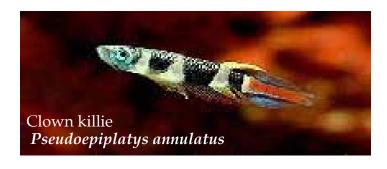
Agua Fria River Guinea

HIS TIME WE JUMP TO the west coast of Africa. To Guinea and the Agua Fria River. The Agua Fria River is one of the largest rivers in Guinea, but compared to the Congo River it is much, much smaller and shallower. It flows through a combination of virgin forests and mixed use farmland. The Agua Fria River is a blackwater environment, tea brown; the water is high and rich in tannic acids.

The substrate is soft and mulmy. Plants grow in immense profusion both along its shorlines and down onto its bed. Water lilies grow in profusion here.

The current is generally slow. Slow movement in dappled sunshine equates to moderate temperatures.





Although it never dries out, seasonal rains raise its banks in rainy season. No rain lowers its banks. This seasonal rain results in lowland flooding, not as extensive flooding as the Amazon River, but flooding none the less. Think of the Mississippi or Missouri Rivers flooding in spring.

The Agua Fria starts in rolling foothills and flows through the costal plains.

Fish such as jellybean tetras, (*Ladigesia roloffi*), yellow kribensis (*Peluicachromis humilus*), clown killies, (*Pseudoepiplatys annulatus*), various jewel cichlids Hemichromis and Polypterus species live in the Agua Fria River. As with the Congo's Malebo Pool the home hobbyist has a wealth of species to stock their Agua Fria River tank.

A particularly nice combination is yellow kribensis, jellybean tetras, Normans lamprey killis, (*Poropanchax normani*), and pigmy upside down catfish (*Synodontis nigriventris*). All are beautiful and peaceful fish.

Setting up an Agua Fria River biotope tank; start with a 55-gallon tank and a powerfilter.









Let's now build an Agus Fria River tank.

Since this is a blackwater environment use a dark and preferably black substrate. To this substrate add both peat moss and coconut coir, waterlogged oak tree leaves are a huge plus if you also add them. They make the substrate more "mulmy" in nature.

Also use peat in your filter or blackwater tonic to add tannin and bring out your fishes best colors. Your water should always look like ice tea when you put it in a clear glass. medium temperature between 74° and 78°F. Add some driftwood, especially smaller pieces as hiding places, but not nearly enough to fill your tank.

Tie low light Anubius to the driftwood for a pleasing effect. Then add your pygmy aquarium lilies, lots of them! Enough so you cover 50% of the surface area of your tank with their floating leaves.

Nymphea zenkeri, the red tiger lotus is a dwarf lily native to Guinea and commonly available in the aquarium trade. This species is known for its brilliant reddish-purple tinted heart-shaped leaves. Add 6-10 lilies to your 55-gallon tank. They will flower for you and scent your whole house beautifully when they flower.

Again try to get natural sunlight on your tank for part of the day, your fish will start to show dazzling color.

We've looked at rocks, wood, sand and plants as the primary biotope ingredients, Next time we will combine them all. Enjoy your Agua Fria River tank.

Happy Fishkeeping!



John Todaro – BAS

From the Brooklyn Aquarium Society's publication SCRUMPTIOUS meals & LIVE FOOD treats Compiled, Edited & Written by John Todaro

Pelicious Earthworm Snacks

or those of you with large fish that are eating you out of house and home, like cichlids.

Most all meat eating fish of any size will gobble up earthworms as a delicious treat.

Cultivating earthworms might just be the answer to your problems, and guess what, you can grow them right in your own home. Yuck!

Earthworms can also be cut up and fed to smaller carnivorous fish. If you're squeamish about cutting up live earthworms (yuck again) and watching them wriggle, you can kill them first by dipping them in boiling water for 10 seconds. Don't forget to cool them down before feeding them to your fish.

But I think fish really enjoy wrestling with a live earthworm, it's all part of the fun of catching and eating them. Yum! Here is what you need to grow your own at home, or in the garage. If your wife lets you!

Guess what? It's not so yucky!



Recipe

Supplies needed:

covers that can be adapted for use as an earthworm "home." 2) You will need to get a starter culture of about 100 worms. The cheapest and easiest way to get earthworms would be at a bait and tackle shop. You can also get them from: Carolina Biological, 2700 York Road, Burlington, NC 27215-3398 Online catalog: www.carolina.com, Phone (800)-334-5551 or from Connecticut Valley Biological, (800)-628-7748, Fax (800)-355-6813 email: connval@ctvalleybio.com Website: www.ctvalleybio.com

There are plastic storage boxes with

1) A container with a minimum size of about 20" x 20" X 12".

Preparation:

Fill the plastic container with loose garden soil, (without any additives such as fertilizer) mixed with a bucket full of rotting leaves and two raw potatoes chopped into small pieces. Add the worms.

The worms should be fed with a cooked mashed potato and cup of oatmeal spread on top of the soil. Put back the damp cloth cover. When the food has been consumed, feed again.

Keep the earthworm container covered loosely (don't worry; the worms can't crawl out) or if you must cover the container, drill air holes in it, earthworms have to breathe too.

Within a few months, you should see large numbers of young earthworms in the soil. At this point you can start feeding your fish. Periodically gently stir up the soil. Now, you should have a continuous supply of fresh, live, earthworms for your fish. Yum!

Ian Fuller - BAS

Transporting Corys

Avoiding self poisoning

Many people often encounter problems when transporting Corydoras.

The number one of these, and to a degree, the one that is to be expected, is that of bag puncturing. If you think about it we are dealing with fish that are equipped with very sharp pointed pectoral and or dorsal fin spines. To help avoid this type of problem it is always best to use strong bags and double them up, which is something that most retailers do automatically. However when bagging your own fish for transporting there are a couple of things that can be done to help alleviate the risk of your Corys puncturing their bag. The first of these is to tape the corners of the bag back with adhesive strips, effectively rounding off the base of the bag and removing the pointed corners. It is the corners where Corys dart into as soon as they are put into a bag, usually getting themselves well and truly

stuck when they lock their fins, usually puncturing the bag in the process.

An alternative to bags and definitely a hundred percent safer are small plastic buckets or food containers with good fitting lids. They are strong enough to resist the Corys sharp fin spines and make the ideal Cory carrier.

Possibly the biggest

problem encountered

and the hardest one to explain is where Corys effectively self-poison themselves. What appears to happen is when a Cory is stressed it releases a fluid from either the base of the pectoral fin spine or the gills, at this moment in time the exact place where the fluid is excreted is not clear and as far as I am aware it has only been observed once. Although several people witnessed the event at the time and fortunately it took place while the fish were being exhibited in a show tank at the Catfish Study Groups Open Show in 2004 and where something could be done immediately to save the fish. It was spotted by one of the stewards and given a complete water change, after which the fish in question, a female C. sterbai recovered fully. At the time it looked like the fluid was being excreted from the base of the gills, but the prime concern was to save the fish rather than determine the source of the fluid.



What we do know is that in the confines of a small plastic bag, or in this case a show tank, this fluid release can be fatal. It appears to affect some species more than others and is brought on by stress. The first sign that there is a problem will be a small amount of foaming on the surface of the water in the bag and the fish will need rebagging in fresh water immediately.

One of the easiest ways to avoid the problem when bagging your own fish is to firstly take a jug of water from the tank the Corys are housed in, then take some more water and put it into a suitably large enough container to temporarily house the Corys you are intending catching. Catch the said Corys and put them into the container, they should be sufficiently stressed from being chased and caught to release the

toxic fluid. After a few minutes if the fish are going to release any toxins there will be signs of some foaming on the surface of the water in the container. Now is the time to re-catch the Corys putting them into a bag or transportation container with the clean toxin free water from the jug, making sure not to transfer any of the contaminated water.

When buying Corys from stores it may not be that easy to convince the assistant that there could be a problem, but if you are in any doubt or you can see any foam forming on the surface of the water in the bag, ask for the fish to be re-bagged in fresh water. I am sure most store keepers will oblige as having customers arriving home with dead fish would not be the type of publicity they would be very keen on.

JoAnna Klein – New York Times February 28, 2019



A Colossendeis megalonyx sea spider in McMurdo Sound, Antarctica. Credit: Timothy R. Dwyer (PolarTREC 2016)/ARCUS

EA SPIDERS ARE ABUNDANT in waters across the globe, and most are so small that you could hold one on the tip of your pinkie. But in the swirling waters around our planet's icy poles, these spiders are giants. If you held the largest of these creatures, its gangly legs would just dangle off the palm of your hand.

Antarctic sea spiders got so big because some 30 million years ago, the Southern Ocean got cooler. This trait, known as polar gigantism, is thought to be essential to why they and many other cold-dwelling invertebrates of unusual size managed to survive.

Researchers wondered what allowed animals

like these to reach such gigantic sizes. They also want to know what will happen as the waters they inhabit continue to get warmer, because it's thought that extremely cold water marine animals can only tolerate a tiny range in temperature, making them particularly vulnerable to global warming.

In a study published Wednesday in Proceedings of the Royal Society B, a team of scientists challenged giant sea spiders collected in Antarctic waters to exercise to exhaustion in a kind of aquatic crossfit class.

Observing how many times they could make the spiders flip over before giving up in water

with increasing temperatures and decreasing oxygen, they discovered that the key was in their swiss-cheese-like skin. As the spiders grow bigger, their skin gets holier, allowing them to fuel their larger bodies by absorbing the abundant oxygen packed into cold waters. It turns out this helps them get oxygen during hot workout sessions, too, suggesting they may find a way to survive as their habitats heat up.

"We thought the giant spiders are going to be the first to disappear from the Antarctic Ocean," said Caitlin Shishido, a doctorate student at the University of Hawaii at Mānoa who led the study.

But "they may actually be O.K. as these oceans warm," she added: "It's like Jurassic Park: 'Life finds a way.'"

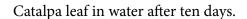
Sea spiders, a kind of marine arthropod called a pycnogonida, are bizarre. They have no lungs, no gills — no organs for breathing at all. They get oxygen by just sitting there, allowing it to pass through the pores of their shell-like skin, called the cuticle.



A Colossendeis australis sea spider. Credit: Timothy R. Dwyer (PolarTREC 2016)/ARCUS

You say Catappa and I say Catalpa By DENIS J. VARDARO - BAS (leaves that is)

10/27/2016





Dried Catalpa leaf.

ike many in this hobby, I am always looking for new ways to do things. About five years ago I started using leaves from the Northern Catalpa tree [Catalpa Speciosa] in my aquariums. This tree is a North American native and can be found in many states as also the closely related southern Catalpa can. It can get confusing when speaking to my fellow aquarists about these leaves as they sometimes think I am speaking of the Indian almond leave, [Terminalia Catappa]. The fact that the Catalpa tree can sometimes be called the "Indian bean tree" makes it even more so.

The Catalpa leave can be very large which first brought it to my attention. It breaks down much quicker in water than Oak Leaves plus shrimp, crayfish and plecos like it very much. It is not unusual for a leaf to completely breakdown in 4 to 6 weeks depending on what animals I have in the aquarium. The leaf can also be crumpled easily and put in your filter.

I've sometimes needed tannin stained water

quickly which these leaves will do for you. Putting 2-3 leaves in 2 quarts of water I can get brown water within days with the water sometimes appearing "milky"s, it can also smell something like rubber when concentrated like this. Recently, I managed to breed Porkchop Rasbora in a five gallon tank and it's possible the three catalpa leaves in there helped get them in the mood.

The chemical compounds in the Catalpa leaf is different than the other leaves that we use in our aquariums yet might achieve similar results that we are looking for, or better. Who knows? But in the five years of using these leaves I can't think of any downside except that upon total breakdown the aquarium "floor" can be somewhat messy with tiny leaf particles.

So if you are looking for something different when breeding, feeding, raising fry, using a quarantine tank or maybe trying to enhance water chemistry, you might give the Catalpa leaf a try. Now go make like a tree and leaf!

Anthony P. Kroeger - BAS

Zip! Zip! Zoom!



Zebra Danios in Your Tank

Brachydanio rerio

he zebra danio has arguably introduced more hobbyists to aquarium keeping than any other fish except the guppy and goldfish. I have never met an aquarist who has not kept zebra danios at one time or another.

Native to Eastern India and growing to about 2 ½ inches all specimens are captive bred by the millions in Florida and the Far East. Available everywhere at cheap prices, the zebra danio and it's many color and fin mutation morphs is one of the most popular community tank fish in the hobby. Zebra danios are the quintessential beginners fish.

The base (original) zebra danio is a metallic blue with horizontal silvery/white strips running

down the length of its body. The dorsal has a fine black and white edge. The belly is white, the eye is black with a silver iris. Ventrals are tinted yellow. Some males have an orange tinged belly.

Many mutations are available: long finned types, golden yellow body, platinum/lavender blue body with no stripes, leopard danios, honey/golden with blue polka dots and no stripes. All mutations are generally available.

Zebra danios are commonly used in medical



testing and genetics due to their great genetic diversity.

Lighting fast! Just try and catch this fish! Zebra danios are completely peaceful. Always keep this danio in a school of 4 to 6 or more fish.

You can keep zebras in a 10-gallon tank, but they are so active a 20-gallon or larger would be better. Add plants, sand and a tight fitting cover. Always cover this fish. Zebras are great jumpers! A sponge or box filter is fine, but a small power filter is preferable. This fish loves to play in the current from a power filter, power head or airstone.

Any water you can drink is fine for them. Keep the temperature between 68° and 78°F. If the water become too hot, over 80°F, the zebras become lethargic. I change 50% of their water weekly. They love large volume water changes.

Zebras eat all foods offered. They especially

love blackworms and freshly swatted houseflies, it's amazing how such a tine fish can swallow a housefly, but they do. They will gorge themselves on live or frozen foods.

Spawning is easy. Usually this is the first egglaying fish most people spawn.

The setup and spawning is the same as the pearl danio. Eggs hatch in about 36 hours and the fry grow very quickly. Spawns are larger (300 - 500 eggs, for such a small fish. Very hardy and long lived, it often lives 3 years or more in good conditions.

Zebras are a great dither fish for shy apistos, rams, etc.

Aquarists have been keeping zebras for over 110 years now! They'll be just as popular in another 100 years!

Try some zip! zip! zoom! zebras in your tank. Happy fishkeeping.

John Todaro – BAS

Species Profile

SCIENTIFIC NAME: Brachydanio rerio.

COMMON NAME: Zebra Danio.

DISTRIBUTION: Kosi River, a tributary of the Ganges system in Uttar Pradesh state, northern India. Wild caught fish have virtually disappeared from the aquarium trade since it's more costeffective to produce on a commercial basis.

PH RANGE: 6.0 - 8.0.

TEMPERATURE RANGE: 76° -101°F. WATER HARDNESS: 90 - 357 ppm.

SIZE: 2 inches.

TEMPERAMENT: Very peaceful, can be combined with many of the most popular fish in the hobby including other small cyprinids as well as tetras, livebearers, rainbowfishes, anabantoids, catfishes and loaches.

It is a schooling species by nature and should be maintained in a group of at least 8-10 specimens.

Maintaining it in decent numbers will not only make the fish less nervous.

Sexing: Sexually mature females are usually rounder-bellied, slightly less colourful and a little larger than males. The differences are especially clear when the fish are in spawning condition as the males intensify in colour and the females fill with eggs.

DIET: Unfussy, will accept anything offered. Offer good quality dried products along with small live and frozen foods such as Daphnia, Artemia and bloodworm.

BREEDING: An excellent choice for those new

to breeding fish. An eggscattering spawner that exhibits no parental care. When in good condition they should spawn often and in a densely-planted, mature aquarium it is possible that small numbers of fry may appear without human



intervention. If you want to increase the yield of fry a controlled approach is required. The adult fish can be conditioned together but one or more smaller tanks should be set up and half-filled with water. They should be dimly lit and the bottom covered with a mesh so the eggs can fall through, but small enough so the adults cannot reach them. The widely available plastic 'grass'-type matting may be used and works well; or filling much of the tank with Java moss or other fine-leaved plant yield good results. The water should be of slightly acidic to neutral pH with a temperature towards the upper end of the range. A small power filter should be positioned so the flow is directed down the length of the tank. When the fish are well-conditioned and the females appear full of eggs one or two pairs should be introduced to each tank. Spawning can be initiated by adding small amounts of cool water every few hours and feeding small amounts of live and frozen foods.

The pairs should spawn the following morning. If the fish have spawned the female will be noticeably slimmer. The adults will eat any eggs and are best removed at which point the power filter should be switched for a mature sponge-filter in order to avoid fry being sucked into the mechanism. Incubation is temperature-dependant but usually takes between 24 to 36 hours with the young free-swimming a few days later. Initial food should be *Paramecium* or a proprietary dry food of sufficiently small (5-50 micron diameter) grade, introducing

Artemia nauplii, microworm, etc., once fry are large enough to accept them.

NOTES: B. rerio is one of the most popular fishes in the hobby, and its popularity is well deserved since it is peaceful, hardy and inexpensive.

REFERENCE: seriouslyfish.com

Xenotoca Iyonsi

By JOE GRAFFAGNINO — BAS

HILE AT A GREATER CITY
Aquarium Society event I noticed a
bag of livebearers on the auction table.
The dominant male stood out because of his light
blue upper body, white belly and the orange
blotch near his tail fin. The group consisted
of three females and two males. The fish were
submitted by Jules Birnbaum. This species of
goodeid came from the Rio Tamazula in Mexico.

I was able to win the bid and brought them home to a waiting 10-gallon tank that had several plastic plants and African cichlid gravel (to maintain water alkalinity). The group settled in easily. After a month or so I noticed a very pregnant female so I placed her in a special livebearer breeding container that separated the fry from their mother. I happened to notice that another female must have had fry earlier because I saw a tiny baby

swimming near the top of the water. A moment later I found that this species eats their fry. I fed the adults crushed flake and several times a week I offered either frozen blood worms or live black worms; both were readily accepted.

I moved the fry into another 10-gallon tank with identical set up and I took most of the water from the parent tank. The water temperature was 75 degrees Fahrenheit with a ph of 7.2. The fry was given freeze-dried Cyclopeeze and frozen rotifers. After a week or so I started giving crushed flakes and live baby brine shrimp. They grew quickly. After a few months, I was able to share these endangered (C.A.R.E.S.) species with other club members within the several local clubs I belong to. If you want a pretty livebearer that is easily maintained then I suggest getting some Xenotoca lyonsi, you won't regret it.



An Ode To A Man & His Killies: **John Todaro**

Experiences With Aphyosemion bitaeniatum



ohn and I were good friends. He helped me as an aquarist in more ways than I can ever count. I thought it only fitting to write an article for his memorial award about an experience we had with killies; his favorite fish. I import and distribute fish for a living. Regularly I am offered many varieties of wild-caught fish – including killies. My African partners refer to them as "ditch fish." I apologize to any killie fanatics who are reading this. I usually try a few of these "new" offerings and import a box.

In September 2018 I was offered "Nigerian Fire Killies" – Aphysemion bitaeniatum. They had a collecting locale of Port Harcourt, Nigeria. A rather rough neighborhood known for the anti-government insurgents who frequent that area blowing up oil pipelines. Before ordering it I looked this fish up online. It looked like an orange bivittatum. Not bad, but definitely a killie niche fish.

I asked John about this fish and he assured me the photos were poor and this killie was gorgeous. He was very enthusiastic about them, so I ordered a box. The fish arrived, but the gorgeous part didn't. What I got were small ¾ inch grey and black "ditch fish." And to top it off they refused all frozen foods also. No

matter what I offered them they would not eat at all.

I called my African partners and they said, "Oh, Mister Tony, you must be patient with this fish." Not exactly words that a distributor wants to hear. So I thought I'll call John and ask him what he would do to get them to eat. John said forget frozen food and suggested live baby brine that received a tepid response. Live Cyclops – yeah, like I had a culture of those sitting around. He hit the nail on the head with his live daphnia suggestion. They loved live daphnia and soon took frozen daphnia. John also suggested very low light for these fish. So I put them in a dark tank in a darkened basement.

Between the live daphnia, lower light and cooler water these killies grew fast and soon colored up. The orange-red coloration these killies displayed truly was gorgeous! I have to admit that John was right. These killies truly are beautiful even if you have to use a flashlight to see them. This killie will always be for killie fanatics. Initially, they are very particular in their needs but for those willing to provide these needs they truly are spectacular. I hope you enjoyed this story!

Happy fishkeeping!

BROOKLYN AQUARIUM SOCIFTY 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.

THE ANNUAL PRIZES ARE:

(paid in BAS Bucks)

1st Prize \$50

2nd Price \$25

3rd Prize \$10



SHIRTS, HATS & PATCHES

BAS T-SHIRTS

SMALL TO XL \$10 EACH
PRICE VARIES ON XXL & LARGER SIZES

Historic

Brooklyn Aquarium Society logo in gold on navy blue short sleeve T-shirt. White lettering states the society's mission...

Educating Aquarists Since 1911



A FEW BLACK BAS T-SHIRTS LEFT



OFFICIAL CAP.
Blue with
embroidered gold
BAS insignia.
One size fits all.
\$10 each

OFFICIAL
BAS embroidered
patches that can easily
be ironed onto any
shirt, hat, jacket or
article of clothing
you wish.

Only \$ 1 each



Get to know our sponsors

Our local aquarium shops are important friends of the fishkeeping hobby. They're here to serve your immediate needs - medications, live foods, or a replacement part for a filter, and best of all, you can inspect the fish you want to buy in person, plus most shops will special order fish for you.

MOST GIVE BAS MEMBERS DISCOUNTS.

BROOKLYN PET SUPPLY

8403 5 Ave. Brooklyn, NY 11209 Store 718-680-0700 Jerry/Diane Fishman 917-414-4185 / 917-575-5551 Spookie11209@yahoo.com We are happy to welcome a new sponsors to the BAS family

AQUA ULTRAVIOLET has designed solutions that provide cutting edge technology and efficiency to our users. They proudly offer innovative new products striving to make technology simple for all of their customers, distributors, dealers and consumers alike. For over three decades Aqua Ultraviolet has been the premier manufacturer of ultraviolet sterilizers and bio-mechanical filtration. info@Aquauv.com; US: (800) 454-2725

INTL: 011 1 (951) 296 3480

MARINE DEPOT wants to help you build a better aquarium. You can earn rewards for every purchase with over 3,875 items to choose from. You can TAKE ADVANTAGE of their special Financing Offers and ongoing sales and specials. We are happy to welcome a new sponsors to the BAS family. REFER YOUR FRIENDS - GIVE \$10 — GET \$10 It's Easy! Here's How It Works: 1. Just go to www.marinedepot.com and click on the REFER A FRIEND GET \$10 OFF button for information.

2. Your friends get a coupon for \$10 off their 1st order 3. You get \$10 (1000 points) when your friends place their 1st order. www.marinedepot.com

1-714-385-0080

DISCUSGUY.COM, Discus Fish Store where we have high quality Discus fish for sale at wholesale prices delivered direct to your door. I have been raising and breeding discus for over 20 years providing customers and pet stores with excellent service and unbeatable prices on discus fish. If you have any questions about discus or if you are interested in a specific strain of discus that you don't see in my store, please contact me and I will get back to you as soon as possible. WWW.DISCUSGUY.COM

AMAZONAS - The legendary freshwater aquarium magazine is now in English. This is a great publication. If you keep freshwater fish, you should subscribe. Only \$29 for 6 issues, and well worth it. CORAL - The reef & marine aquarium magazine a fabulous magazine for reef and marine fish enthusiasts. \$37 for 6 information packed issue. For more information go to WWW.AMAZONASMAGAZINE.COM

ABSOLUTELY FISH'S staff is knowledgeable and can help you solve your aquatic problems. They offer a 15% discount on select fish, marine life & supplies when you present your current BAS membership card. A really great aquatic shop and well worth the trip. Make a day of it!ABSOLUTELY FISH

1080 Route 46 West, Clifton, NJ 07013

Ph: 1 (973) 365-0200 Open 7 days a week:

Mon - Fri 12AM - 9PM Sat 12AM - 8PM Sun 12AM - 5PM

MANHATTAN AQUARIUMS has one of the largest selections of marine fish & corals on the east coast. You should check them out for your Marine Fish & Coral needs. BAS members get a 10% discount with a current membership card.

MANHATTAN AQUARIUMS

522 West 37th Street, NYC, NY 10018 Ph: 212 594-2272 • Fax: 212 594-2271

www.ManhattanAquariums.Com www.UniqueCorals.Com

MONSTER AQUARIUM INC. Specializing in exotic freshwater fish, plants & special orders plus a full range of dry goods & fish foods and filter repairs, plus they do set ups & tank maintenance. (freshwater only). They offer BAS members 10% discount on all in store items, does not apply to special orders. They're open 7 days a week from 10am to 8pm for all your aquarium needs. MONSTER AQUARIUM INC. 131-08 40th Road, Flushing, NY 11354 Ph: 347.732.0373

MONSTERAQUARIUM@HOTMAIL.COM

CARIBSEA - From marine and reef community aquariums, African cichlid aquariums to planted aquarium susbtrate you can count on Caribsea.Trusted by hobbyists and professional alike since 1972. They have 280 products to help make you a better hobbyist. Go to their web site to down load their latest catalog or product flyers, videos and directions or to contact them with questions at WWW.CARIBSEA.COM

CENTRAL AQUATICS has been generous in its donations from its Aqueon and Coralife brands to the BAS, and now they have joined the BAS family of sponsors. **Aqueon - It's all about the fish -** Developed by true aquatic hobbyists and focused on products that will make your life easier when keeping an aquarium. **Coralife - Beyond the basics!** All-inclusive aquariums and a complete range of lighting and equipment that meet the needs of advanced hobbyists. You can learn more about their products at the following websites:

aqueonproducts.com & coralifeproducts.com 1-888 - 255 - 4527

JOSEPH S. REISMAN & ASSOC. ACCOUNTING & TAX EXPERTS.

They specialize in aquarium societies, aquarium hobbyists, aquarium retail suppliers and stores and aquarium wholesale suppliers. They offer a 10% discount to Brooklyn Aquarium members with a valid membership card.

Ph: 718-332-1040 • Fax: 800-518-5251 or www.TAXHELP1040.COM

TROPICAL FISH HOBBYIST MAGAZINE has helped aquarists succeed in fish keeping for 64 years. Every serious hobbyist should subscribe to TFH. Now a bi-monthly, they offer a special subscription deal: buy 6 issues and get 3 Free. Use promo Code VIP to get the deal. tfhmagazine.com/subscriptions 1-888-859-9034

PACIFIC AQUARIUM in Manhattan's Chinatown carries ornamental goldfish, koi, freshwater fish, & aquatic plants. BAS members get 10% discount with current membership card (Discounts not to be combined with other specials). They have a full line of aquarium supplies, and you can order custom size tanks. PACIFIC AQUARIUM 46 Delancey St., NY, NY 10002 Ph: 1 (212) 995-5895

Open 7 days a week and all holidays 10AM to 7:30PM

ZOOMED AQUARIUM LED HO-

Energy efficient LED Aquarium lighting with a low profile design!

- Unique modular design allows for replacing or swapping out LED panels.
- 50% brighter than T5 HO fluorescent lamps.
- More LEDs than comparable hoods on the market = more light!
- Shimmer effect: Bright white light produces shimmer, just like in nature.

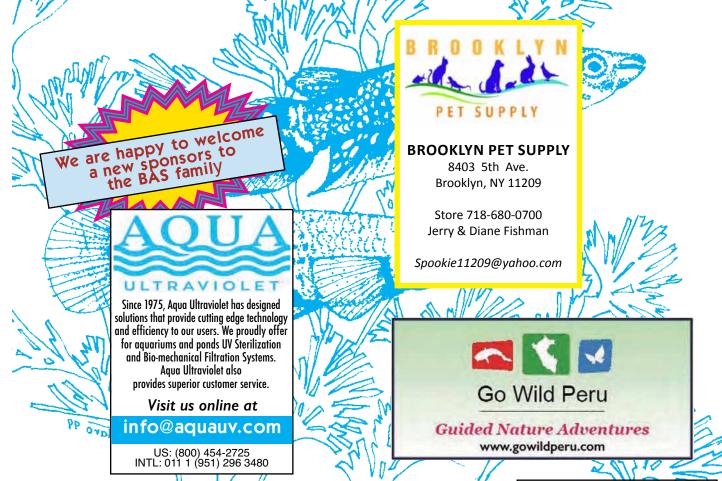
Find out more about it and other ZooMed aquatic products at WWW.ZOOMED.COM

REEF NUTRITION Inc. Advanced Fish Feeds not only include natural, colorenhancing ingredients, they provide the highest quality nutrition and the least waste, resulting in a cleaner tank. Their high quality feeds are made using proprietary processes developed by their parent company, Reed Mariculture, a world leader in the development of algae — and zooplankton — based feeds.

Reef Nutrition – We Feed Your Reef. See your fave LFS for Reef Nutrition products with the purest & most natural feeds on the market. For more info. go to WWW.REEFNUTRITION.COM



Our Sponsors Support Us! We Must Support Them! Tell Them You Saw Their Ad In The Aquatica



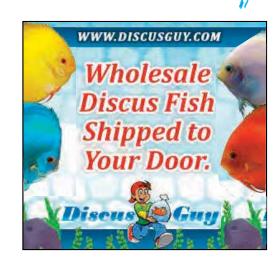
Manhattan Aquariums

One of the Largest Selections of Marine Fish & Corals on the East Coast

522 West 37th Street NYC, NY 10018

> DISCOUNT FOR MEMBERS

Phone: 212 594-2272 Ext. 5 Fax: 212 594-2271 Cell: 347-782-2407 www.ManhattanAguariums.Com www.UniqueCorals.Com





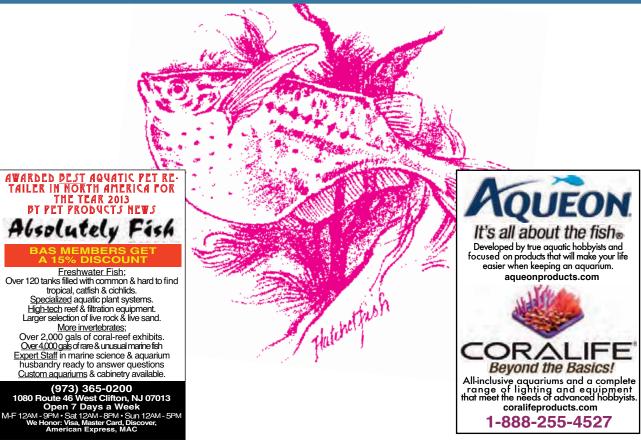
Build a Better Aquarium with Marine Depot

Earn Rewards for every purchase with over 3875 items to choose from Take advantage

of our special Financing Offers and ongoing sales and specials. Visit www.marinedepot.com for more information.

1-714-385-0080 www.marinedepot.com

Our Sponsors Support Us! We Must Support Them! Tell Them You Saw Their Ad In The Aquatica





We have 280 products to help make you a better aquarist!

Questions about our products?

Feel free to contact us via our web site. www.caribsea.com

CaribSea, Inc. P.O. Box 13359, Fort Pierce, FL 34979 **772-461-1113**



PACIFIC AQUARIUM

46 DELANCEY ST., N Y, NY 10002

Ph: **(212) 995.5895**

Open 7 days a week & all holidays 10am -7:00pm

Specializing in exotic marine fish, freshwater fish, goldfish & koi & freshwater aquatic plants. Complete line of aquarium sup-

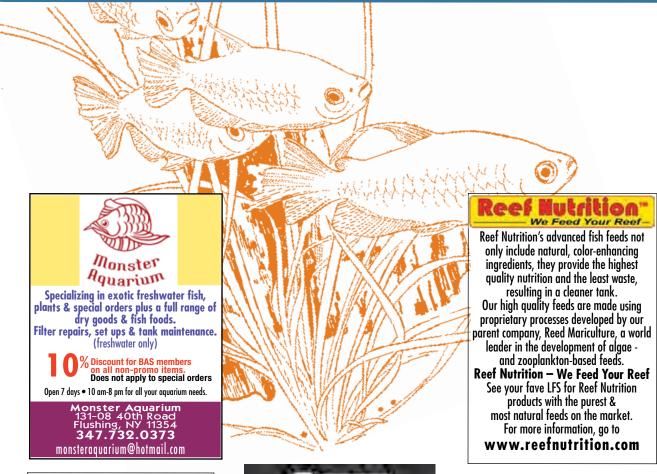
Complete line of aquarium supplies. Custom size tanks & maintenance available.

10% Discount to
BAS members with
current membership card

WWW.PACIFICNYC.COM

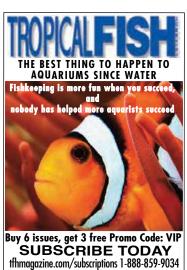
Close to the F, B, D, & 6 Subway lines Visa, MC, Discover Card, AmEx

Our Sponsors Support Us! We Must Support Them! Tell Them You Saw Their Ad In The Aquatica









BENEFITS OF MEMBERSHIP IN THE BROOKLYN AQUARIUM SOCIETY

Your Membership Card is your Passport to Becoming an "Educated Aquarist." Don't lose it. Put it in your wallet or purse. You'll need it to attend Monthly Events and get discounts at participating pet stores.

YOUR MEMBERSHIP BENEFITS INCLUDE:

Free Admission to all general meetings, held on the 2nd Friday of the month (except July & August) at 7:30 pm at the Education hall of the New York Aquarium, at Coney Island, Surf Avenue at West 8th Street, Brooklyn, N.Y. The Society presents expert speakers on all aspects of the hobby, from freshwater fish to marine aquatic life. Door prizes and raffles at every meeting. Breeder Awards Program (BAP) – Certificates and trophies awarded. General meetings are open to the public (\$5 donation is requested for non-members). Free parking and free refreshments.

Special Interest Groups (SIGs) hold meetings, free at members' homes, for members only. Here's your chance to network with members with the same interests. Discuss, ask questions, learn, teach and develop your expertise in freshwater and/or marine aquarium keeping.

Aquatic **News** *The Journal of the Brooklyn Aquarium Society,* our tri-monthly (4 issues except July & August) award winning publication is on our web site. Each issue is filled with articles on both marine and freshwater aquaria keeping. Articles can be downloaded.

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!

The 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 (718) 238-1792.

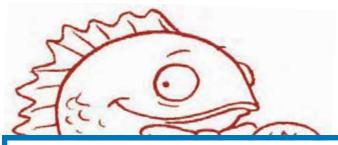
Video Tape Library: We have a video tape library on different aspects of fish care and breeding plus past BAS Speaker Events. These video tapes are available for a small fee for members (a refundable deposit is required on each tape. A small mailing and handling fee is deducted from this fee). You may borrow tapes for 30 days. You cannot copy them.

Discounts for Members at many BAS participating pet stores when you present your current BAS membership card.

Welcome and we hope you take advantage of the many benefits BAS has to offer.

Educating Aquarists Since 1911

Become an educated aquarist



Membership & Renewal Application Brooklyn Aquarium Society

Mail This Form And Your Check Payable to Brooklyn Aquarium Society to BROOKLYN AQUARIUM SOCIETY, ATT: MEMBERSHIP CHAIRPERSON P.O. BOX 290610, BROOKLYN, NEW YORK 11229-0011

Meetings are held at the NY Aquarium Education Hall on the 2nd Friday of the month at 7:30pm. Knowledgeable speakers on fish care and culture, and fish auctions. Free parking and refreshments. All meetings are free to members. Visit us on line:

NAME	OCCUPATION		
ADDRESS	CITY	STATE	ZIP
_			
PHONE (DAY)	(EVE)	(FAX)	
E-mail Address			
TYPE & LENGTH of MEMB		1 4	1\/E A D
1NDIVIDUAL 1yr. 2yr. 3yr. 4yr.] \$15 STUDENT	TYEAK R 18 YEARS)
\$20 \$36 \$51 \$68	\$25 \$45 \$63 \$85	i	,
	ist all family members. Only first to		
	2		
4	5 marine [] freshwater	_ 6	C:
Nomber of fanks []	marme [] nesnware		[no]
If yes, what types do	you breed:	<u>-</u>	
Special interest life	·)		
special interest (if any	1		
	out BAS [friend] [dealer] [fl		
How did you hear abo	out BAS [friend] [dealer] [fl	yer] [<i>Aquatica</i>] [m	ag ad] [online]
How did you hear aboother To volunteer check [yes	out BAS [friend] [dealer] [fl	yer] [<i>Aquatica</i>] [m	ag ad] [online]
How did you hear aboother To volunteer check [ye On occasion, the Brooklyn Aquebers.	out BAS [friend] [dealer] [fl	yer] [Aquatica] [m vill contact you if you send notices of interest	ag ad] [online]
How did you hear aboother To volunteer check [ye On occasion, the Brooklyn Aquebers.	put BAS [friend] [dealer] [fles] es] [no] A board member varium Society uses its mailing list to	yer] [Aquatica] [m vill contact you if you send notices of interest	ag ad] [online]
How did you hear aboother To volunteer check [ye On occasion, the Brooklyn Aquebers.	put BAS [friend] [dealer] [fles] es] [no] A board member varium Society uses its mailing list to	yer] [Aquatica] [m vill contact you if you send notices of interest	ag ad] [online]
How did you hear aboother To volunteer check [ye On occasion, the Brooklyn Aquebers.	cout BAS [friend] [dealer] [fles] [no] A board member varium Society uses its mailing list to the these mailings please check here Official use	yer] [Aquatica] [m vill contact you if you send notices of interest []	ag ad] [online] u check yes. to our mem-
How did you hear abouther To volunteer check [ye On occasion, the Brooklyn Aquibers. If you DO NOT wish to receive	put BAS [friend] [dealer] [fles] [no] A board member varium Society uses its mailing list to the these mailings please check here Official use Type of member board approved	yer] [Aquatica] [m vill contact you if you send notices of interest [] crship [F] [I] [S	ag ad] [online] check yes. to our mem-