AQUATICA

THE ON-LINE JOURNAL OF THE BROOKLYN AQUARIUM SOCIETY
VOL. 30 JANUARY - FEBRUARY 2017 No. 3

106 Years of Educating Aquarists

Archerfish - *Toxotes jaculatrix*

Wishing All A Happy New Year of Fishkeeping!

106 Years of Educating Aquarists

AQUATICA

VOL. 30 JANUARY - FEBRUARY 2017 NO. 3

Contents

AQUATICA STAFF

Editor: **John Todaro**
Associate Designer: **Ginny Cahill**
Copy Editor: **Kay Martin**
Freshwater Shrimp Editor: **Ryan Curtis**
Marine Editor: **Open**
Plant Editor: **Izzy Zwerin**
Catfish Editor: **Sy Angelicus**
Illustrations: **John Todaro**, **Norman Doughty**, **Chris Giam**, **Julia Noonan**, **Shelly Sacks**
Exchange Editor: **Open**

Contributing Writers: **Bill Amely**, **Sy Angelicus**, **Joel Antkowiak**, **Ryan Curtis**, **Anthony P. Kroeger**, **Wayne S. Leibel**, **Peter McKane**, **John Todaro**, **Greg Watry**, **Izzy Zwerin**

Note: The Editor takes full responsibility for misspellings and punctuation errors.

AQUATICA is published on line bi-monthly (except July/August) by BAS. **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 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, Bklyn, NY 11229-0111
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: **John Todaro, 247 Middletown Road, South Londonderry VT 05155 - Phone: 802 824-3743**
Fax: Same. You can submit articles to the Editor by mail, fax, or E-mail to: JTODDYBAS@AOL.COM.

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. Membership is $25 per year family/$20 individual/$15 for students under 14. Send inquiries or membership checks payable to:
Brooklyn Aquarium Society, c/o Membership Chairperson, P.O. Box 290610, Brooklyn, NY 11229-0011.

Brooklyn Aquarium Society Board of Directors

Officers

President:
Steve Matassa
1st Vice President:
Open
2nd Vice President:
Marie Licciardello
Treasurer:
Open
Corresponding Secretary:
Dan Smith
Exchange Editor:
Open
Membership Chairperson:
David Manuel
Sergeant-at-Arms:
Lita Goldberg
Recording Secretary:
Kay Martin
Web Master:
Bernard Deren
Editor:
John Todaro

Board Members

Bill Amely
Marty Karfinkel
Gennady (Gene) Kogan
Mike Roman
Vito Sacchieri
Robert Strazzulla

Brooklyn Aquarium Society

Calendar of Events ~ 2017

2017

JAN 13 Michael Barber ~ Tropical Fish Collecting & Wildlife Expeditions ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

FEB 10 Pat Donston ~ Biodiversity Practices for Reef & Planted Exhibits ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

MAR 10 Joshua Wiegert (Batfish Aquatics) ~ Brackish Water Fishes ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

APR 14 Speaker TBA ~ Marine ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

MAY 12 Giant Spring Auction ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods including a new 55-gallon tank & stand.

JUN 9 Ruben Lugo ~ My Adventures Keeping & Breeding L-number & Other Fish That Suck ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction. BAS elections·

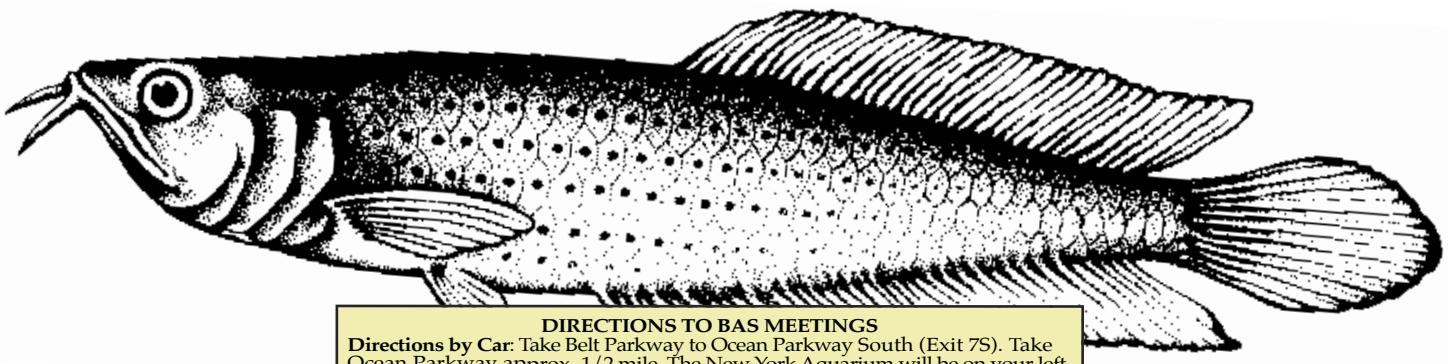
JULY/AUGUST – NO MEETINGS

SEP 8 Speaker TBA ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

OCT 13 Giant Fall Auction ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods
including a new 55-gallon tank & stand.

NOV 10 Speaker TBA ~ Marine fish, aqua-cultured corals, freshwater fish, plants & dry goods auction.

DEC 8 Holiday Party ~ Members, their families & friends, • Fish Bingo & Prizes • BAS awards presentations.



DIRECTIONS TO BAS MEETINGS
Directions by Car: Take Belt Parkway to Ocean Parkway South (Exit 7S). Take Ocean Parkway approx. 1/2 mile. The New York Aquarium will be on your left.
Directions by Subway: Take either the Q or F trains to West 8th St., NY Aquarium Station. **FOLLOW SIGNS TO NY AQUARIUM**.

Anthony P. Kroeger – BAS

Part 2

THE RESPONSIBLE AQUARIST

The Plecostomus in Florida!

Every aquarist knows what a Pleco is and has kept them. Many times they outgrow their tank.

Plecos are now an established exotic species in Florida. Actually, 3 common Plecos are now established in every county, every stream and river south of Ocala.

The established species are the common Plecos, ***H. plecostomis***, the sailfin pleco, ***P. multiradiatus***, and the snow king pleco, ***Pterygoplichthys anisitsi.)***

Plecos were first seen in Florida native waters in the 1950's. By the 1970's, all 3 species were well established. It is very common to see wild Plecos in every small stream in Florida. Were they released by hobbyists in sufficient numbers to establish them? Probably not; most likely, they are fish farm escapees.

But regardless how they got into Florida waterways, it is still due to the aquarium hobby that they are there!

Okay so big deal, you say. What harm can Plecos do? They clean my aquarium; what's wrong with them cleaning streams too? They don't eat anything except algae, so how can that hurt?

Well, you're partially right and partially wrong. Let me explain.

The established Plecos are large fish, easily reaching 12"- 14" inches. In Florida, there are no natural predators of Plecos like in South America. The bass is the top dog predator along with the gar in Florida. Both of these predators are active during the day when most Plecos are not.

Gars will eat Plecos, but bass rarely if ever do. So as a result, most spawned Plecos live; being spiny and heavily armored helps them too.

Plecos are very fecund fish. A single spawning can easily top 1,000 to 2,000 eggs. Male Plecos guard their eggs in caves which helps ensure the eggs hatching. Here is where the first bad side effect comes in. Plecos dig caves, long ones, 3' feet or more deep usually about 6" to 8" inches in diameter. In nature, Plecos are colony spawners with hundreds of males' caves within a foot or less of each other.

In Amazonian clay soil, this is not a problem, but Florida is sandy along its rivers. Take 100 or more 3 - 4 foot deep 6"to 8"inch diameter sand cores out of a sand bluff and you weaken it so much it will collapse if there is a hard rain. This is something that happens often in subtropical Florida.

Your gated home has a beautiful terrace overlooking the water and one day suddenly 4' to 5' feet of it collapses into the water due to Pleco nests undermining it by coring sand out from under it. How happy would you be? What will you tell your insurer? I have a "Pleco infestation"?

Such collapses occur regularly in Florida now! You can even buy "Pleco insurance." Regular home insurance policies do not cover this sort of damage. "Pleco insurance" is expensive!

The Plecos must be hand pulled by divers out of their nest/caves and this is costly to say the least. You, as a home owner, are not an aquarist, but yet you have to pay for expensive "Pleco insurance" premiums to protect your home and property due to the careless release of Plecos into the wild 50 years ago. How happy would you be?

Would you blame the aquarium industry and hobby?

Most homeowners in such situations do!

You can only think of Plecos like "water termites" for your waterfront deck as you see it collapse before your eyes.

Even building codes have had to be amended to accommodate "Pleco collapses." You cannot build within 25 feet of a waterway in Florida anymore.

Plecos are an ongoing problem. Just because you get them off your property this year, there is no guarantee that they will not return next year.

Some banks along the Alafaya River near Tampa are so honeycombed with Pleco tunnels by the thousands, that they support an industry: the collection of Pleco eggs by divers for sale to fish farms to raise and sell to you!

The eggs are bright orange and clumped together. Egg masses range from egg to oranges in size, and their colors range from yellow to orange. Orange egg masses have more fertile eggs in them than yellow masses. The price a fish farms pay for orange egg masses is higher, usually a penny per egg.

Plecos can dig caves amazingly fast. They can easily dig a 3 foot deep cave overnight. So you can have no Plecos one day and a deck that is sliding into a waterway the next.

Fish farms are required, under Florida law, to have earthen retaining walls to insure that no fish escape. But this is kind of like closing the barn door after the horse has already run away. Wild Plecos in water drainages near fish farms can easily breech these earthen retaining walls, thus allowing more exotics of other species out into natural waterways and native species into fish farms.

Granted such laws do slow the problem down, but they do not eliminate it!

Another part of the problem is that Plecos seem to prefer digging in soft sand. This is very sensible to them; which would you rather dig thru to make your home, soft sand or densely matted tree roots? As such, lawns and open spaces under terraces, decks etc., are the most affected areas.


Pterygoplichthys anisitsi

Remediation for Pleco damage is very expensive too! How are you going you fill in all those caves under your deck, especially since as they are underwater in the rainy summer season when Plecos breed.

Even if you wait until late fall/early winter when the water levels fall and the caves are now in open air, what will you fill them with? And who will fill them?

Concrete is useless. They simply dig under it or either side of it the next year.

Sharp gravel is better. Plecos do not like that. But getting someone to hand fill one hundred 3" foot Pleco holes on a bluff for you is definitely not going to be cheap! Remediations can easily run five figure bills!

Well at least Plecos clean the waterways of algae, right?

Well, yes they do, but that is not as beneficial as it first sounds either.

Plecos will strip areas clean of algae which means some plant life must grow in its place. Usually this is *Hydrilla* or water Hyacinth, both non-native exotic plants that now grow everywhere in Florida.

By removing the algae, the rapid growing *Hydrilla* and water Hyacinth have no competition and their numbers explode exponentially. Both plants can grow so densely that you cannot either boat or walk through them.

Large amounts of money are spent every year in Florida removing these two plants to keep the rivers open to use. Invariably when they are removed, large numbers of Plecos are found too! But little to no algae. Once the Plecos eat all the algae, they then switch to *Hydrilla*. Plecos do not eat water Hyacinth. So where the surface is covered in water Hyacinth you rarely find any Plecos.


Pterygoplichthys multiradiatus

Admittedly, after 50+ years, the Florida eco-system has adjusted to Plecos. Nature will always find an equilibrium. But that does not mean that the equilibrium is better or more productive than the original one which existed prior to the non-native introductions.

Never release any aquarium fish into nature! Okay, so Florida is far away; not your problem!

Next time we'll look in your backyard, in the Northeast, so you can see how it can affect your waterways too!

Never release any aquarium fish into nature!

Be a "responsible aquarist."
Happy Fishkeeping.

Tony

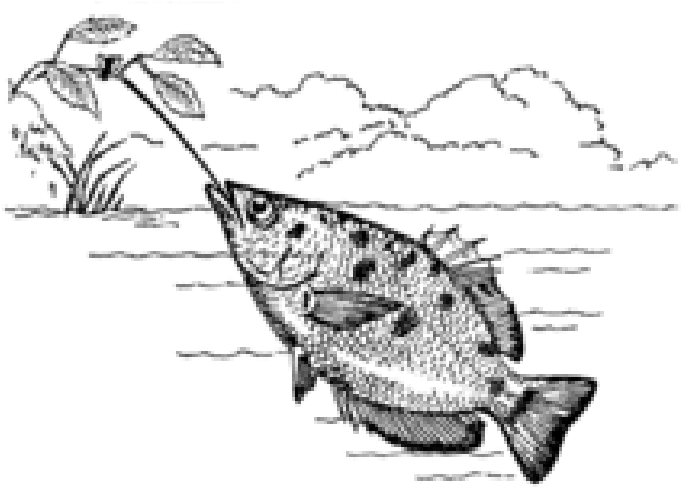
Greg Watry – Digital Reporter

THIS TROPICAL FISH CAN RECOGNIZE HUMAN FACES

It's been said that crows can recognize and distinguish a human face in a crowd. It's an amazing feat considering research indicates humans possess an area of the brain solely devoted to facial recognition. However, new research from Australian and U.K. researchers claims a species of tropical fish also possesses the ability to recognize a human face.

The research was published in *Scientific Reports.*

"Human facial recognition has previously been demonstrated for birds; however, they are now known to possess neocortex-like structures," the researchers wrote. "Fish do not appear to possess neocortex-like cells, and given their lack of direct exposure to humans, are unlikely to have evolved any specialized capabilities for human facial recognition."



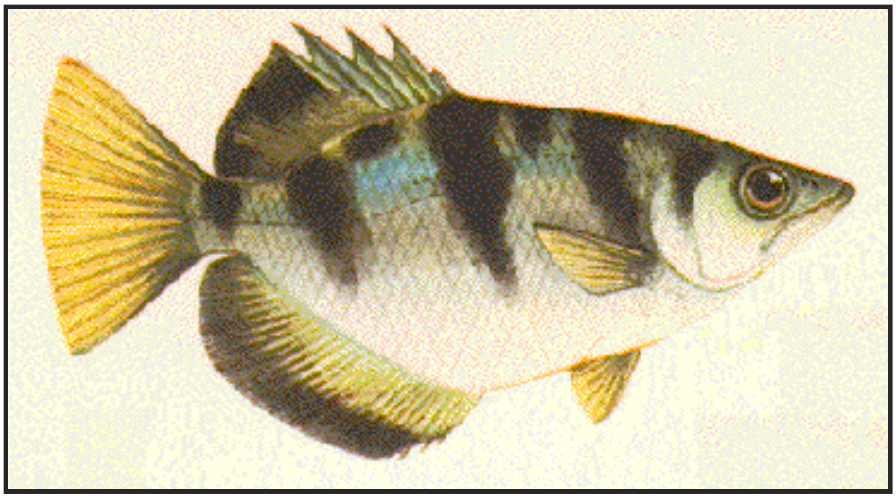
In their study, the researchers focused on the archerfish (*Toxotes chatareus*), a silvery fish with black and yellow splotches lining its body. The species is endemic to the waters off the coast of India, Myanmar, Malaysia, the Philippines, the East Indies, and Thailand. But what made them ideal for the study was their method of hunting. When their sights are set on some prey resting on an overhanging branch, the archerfish directs a stream of water at the prey, knocking them into the water.

According to the researchers, this demonstrates impressive cognitive capabilities and shows the archerfish is capable of picking out prey from a complex visual background.

First, the researchers wanted to see if archerfish could distinguish between two different faces. After positioning a computer monitor above the aquarium, the researchers trained the fish to discriminate between two faces by associating one of them with a food reward. Within two to 14 sessions, the four fishes correctly spat a stream of water at the face associated with the food reward.

Next, the trials were expanded to see if the fish could distinguish a single face from 44 choices. Surprisingly, the fishes were highly accurate, with an average peak performance of 81 percent. During a second experiment, the researchers discovered that even with trivial clues, such as head-shape, brightness, and color, removed, the fish recognized the correct face with 86 percent accuracy.

"Some fish were immediately highly accurate, while others improved with experience," the researchers noted. "These differences in individual performance provide additional evidence that some of the fish were using different features for facial identification from the others and that this visual information differed in its effectiveness for the discrimination task."



Anthony P. Kroeger - BAS

MEET THE STONY CORALS

Hammer corals are beautiful and impressive corals for your home reef aquarium. Long hammerhead tipped tentacles give these corals their name.

Drop a HAMMER in Your Reef Tank!

Hammer Corals

Euphyllia ancora and *Euphyllia paraancora*

Native to a wide area of the Indo-Pacific, these corals come in bright fluorescent green, glowing brown and fluorescent blue colors.

Commonly available both in stores and online, hammer corals are always moderately priced. Two species are offered commercially under the name hammer corals: *Euphyllia ancora* and *Euphyllia paraancora.* The main difference to the hobbyist is their shape. *Euphyllia ancora* looks like a zigzag miniature version of the great wall of China when its tentacles are withdrawn, while *Euphyllia paraancora,* on the other hand, branches from the base.

Care for both species is the same. Standard reef water parameters - salinity 1.023 - 1.025, pH 8.2, temperatures in the mid 70's - are fine. Be sure to add calcium and strontium additives regularly, per manufacturers instructions. Most reef lighting is just fine for hammer corals.

Keep them in a medium current. If the current is too strong, they will not extend their tentacles.

Hammer corals can grow rapidly into impressive sized colonies, so give them plenty of room. Keep them in at least a 55-gallon aquarium.

Hammers have very potent stinging sweeper tentacles. They will sting, injure and possibly kill any coral that is too close to them. Always leave at least a 6" inch diameter coral-free buffer zone around any hammer coral.

I feed my hammer corals any meaty tidbits (chopped krill, clam, fish, mysis shrimp) via a turkey baster once a week.


Photo: Charlie Veron

Hammer corals can suffer photosynthetic (light) shock. Unless the hammer you are interested in buying is a captive grown frag, you will have no idea what light intensity the coral was under or at what depth they were collected from. If this is the case and you are not sure, then initially place them at the bottom of your reef aquarium and move them up as they accustom themselves to your specific lighting conditions.

You can place hammer corals in close proximity to each other. Likewise, you can place them near any related *Euphyllia* or torch corals. They will not sting each other. Placed together, the various shapes and stunning colors will make an unforgettable display in your reef aquarium.

If your hammer seems to be developing a lot of stinging sweeper tentacles, move it to an area of less current and lower light intensity. Doing such will usually minimize the extension and use of the sweeper tentacles.

When you put your hammer coral into your aquarium, always epoxy it or very securely wedge it in place. The base of hammer corals are not covered in living tissue; therefore, the coral has no way to attach and secure itself, so it needs and appreciates your assistance to do so. I suggest you use plenty of epoxy as the hammer will grow and as it grows it will weigh more. Better to secure that future weight with epoxy than to find out one day that it has crashed down upon everything below or, worse yet, a pane of glass.

Hammers have very potent stinging sweeper tentacles. They will sting, injure and possibly kill any coral that is too close to them. Always leave at least a 6" inch diameter coral-free buffer zone around any hammer coral.

Observe closely and choose carefully when selecting a hammer coral at your dealer. Collection and shipping are tough on hammers.

Specimens are usually broken off of large colonies. This results in tissue damage and shipping compounds the problem as these corals have large and sharp structures called septa topping their skeletons. When sloshed around in the bag during shipment, it's not uncommon for the septa to cut living tissue of the hammer.

For most corals, this damage is not a problem, but for *Euphyllia* family corals it can be.

Hammers in particular are suseptible to what in the trade is called "brown jelly" or "brown goo" infection. The injured flesh is attacked by microorganisms turning it into what essentially looks like a mass of brown goo on the coral. Such infections can start very small but grow extremely rapidly, sometimes killing a colony within hours. If this occurs on a branched (*Euphyllia paraancora)* hammer, you can simply break off the branch taking extreme care not to get the goo on any other part of the hammer coral or any coral in your reef tank, for that matter.

The walled hammer (*Euphyllia ancora*) needs an immediate freshwater dip to treat a "brown jelly" infection. Place it in fresh dechlorinated tapwater that is the same temperature as your reef aquarium for 2 to 5 minutes. This usually kills the microorganisms but not your hammer.

It may require several dips: morning, noon and late night. If you go with multiple dips, keep the time duration of each to the shorter of the recommended dip times, 2 to 3 minutes each. Untreated "brown goo" infections are usually fatal to hammers corals. Always watch for it and quarantine all hammer corals so it does not enter your reef tank. All *Euphyllia* species are susceptible to "brown goo," but hammers more so.

Assuming you obtain a healthy specimen, hammer corals will prove hardy, gorgeous, long lived and grow well. So drop a hammer into your reef tank soon!"

Happy reefkeeping

Tony

REALLY? THAT LONG AGO!

Time does fly, doesn't it?

It's rather scary; when I think of how long ago certain events in my life took place, and where I am in my life today. Here are some examples of what I mean:

I graduated from High School in 1976 (40 years ago, in June).

I had my first girlfriend in 1980 (36 years ago).

I received my Bachelor's Degree in 1986 (30 years ago).

I got married in 1988 (28 years ago, in October). Unfortunately, I lost my wife to cancer in 2002.

My son was born in 1990 (26 Years ago). He's now married as of 2015.

My last girlfriend and I split up in 2009 (7 years ago... OUCH!).

You get the idea. I'm now 58 years young (my body tells me otherwise, at times) and I've been a proud member of the Brooklyn Aquarium Society since 1993 (23 years ago).

Throughout my childhood, my brother and I have had goldfish in a bowl and turtles which never lasted that long with us. Given that today many turtle owners are experiencing life spans of 20 to 30 years or longer, it makes me wonder if I had a "brown thumb" back then.

My mother, knowing that I had a love for fish then, gave me a 15-gallon stainless steel aquarium for Christmas in 1973 (43 years ago, if you're counting). Amongst my first fish was a large silver Angelfish (can I leave out those Latin names? I can be spelling challenged, not to mention how many of us really use them, anyway?), a large Fantail goldfish and a pair of Sunset platies. The platies I personally purchased with the help of my dad from a Petland store that was then located on 14th Street between 6th and 7th Avenues (not to be confused with Petland Discounts, as they were two different franchises). Today, these platies would be considered "Blue Parrots," as the male possessed a light blue body with black speckling; his dorsal fin was a bright yellow with a dark red caudal fin. Back then I tried buying a "pair," as that's how they were sold by the store. I showed myself as the novice I was then, when the "pair" I wanted consisted of two males. Of course, the clerk pointed out my error and I went home with one fish of each sex (I have to admit, I would have preferred to walk away with the two males. Today, I'd be happy with that arrangement).

Once the tank was set up and the fish were added, it looked so cool. I was a happy camper. Of course, they didn't stay alive very long; thus I would learn about things like compatibility and water changes (which I really didn't do too much of back then, and am only slightly better at it today. Can you say "Laid Back"?)

The first livebearer to drop fry for me was a Green Swordtail on December 31st of that year. My first egglayers to spawn for me were a pair of Pink Convict Cichlids (which I learned is pronounced Sick-Lids, and not Chick-Lids. You sure could have fooled me. In addition, in my opinion, they did. It should be pronounced the latter way, rather than the former).

Over the years, I've had fish in bowls, jars, small tanks and large tanks (55 and 60 gallon tanks are large to me). I've had small fish, big fish and oddballs (Stone Fish and Alligator Gar, just to mention two). I've made every novice mistake under the sun, but I love my fish. It's good to write about my experiences as it reminds me that I'm human and how I must always respect the lives that are entrusted to me to care for and further my knowledge in the hobby and learn from my errors to become a better fish keeper. Then I can pass on my knowledge to others so they can enjoy their fish and remain in the hobby for years to come.

I do miss the women in my life, but I'm grateful that I have my fish around to bring me joy.

Weird, huh? Well, yeah!

Bill

Anthony P. Kroeger – BAS

Ticto Barb
Pethia ticto

The Ticto Barb is a barb no hobbyist should miss.

Native to the Indian subcontinent countries and Myanmar. It grows to about 3 1/2 inches. I have been told it occurs in parts of Thailand also, but I have never been offered it by exporters there. This fish is also called the Tic-Tac-Toe Barb commercially. Ticto barbs have a silvery/gold body shaded towards light green above. There are 2 indistinctly edged black spots; one over the shoulder, the other in the center of the caudal peduncle. The dorsal, anal and ventrals all are spangled with black spots. Their color is red, orange or yellow. The tail is orange/yellow in color. Some (but not all) males develop a red overlay and a red nose when in good condition.

Ticto Barb - *Pethia ticto*

Odessa Barb - *Puntius padamya*

A similar barb which may be a hybrid of this barb and some other species is marketed as the "Odessa" barb. Odessa Barbs are similar in coloration except they have a wide brilliant red stripe extending from the nose to the tail. They have black eyes with a red iris. Their belly is white. Both Tictos and Odessas are very beautiful fish. Care for both species is the same.

Better stores and internet vendors usually carry them for a reasonable price too.

Ticto barbs are peaceful, schooling, community tank fish. A 20-gallon long is fine for a single school of 4 to 8 fish. Plant this tank along the sides and add some floating plants too. I use a small power filter also. Be sure to cover their tank; they like to jump.

Tictos show better color in soft, acid water, but they tolerate other types of water too.

For a really pretty display, keep them in soft water, pH 6.6 - 7.0 and at a temperature between 70 - 76°F. This fish glows after water changes. It loves water changes. I change 30% weekly.

Feeding is easy too. They eat everything offered. Frozen bloodworms, daphnia and mosquito larvae really intensify their colors. They do occasionally nibble on soft plants, so I give them spirulina flakes as a supplement. Of course if you feed them any live food as a treat, they really appreciate that too!

Breeding is easy and follows typical barb patterns.

Condition the adults separately on high protein foods for about one week. Males color up quickly on this diet.

Put a pair in a 5-gallon tank with marbles covering the bottom of the tank, a spawning mop and an air stone. Fill the tank only half way with conditioned water.

The pair will spawn the next morning and lay about 150 to 200 eggs. Remove the adults post spawning or they will eat the eggs. Eggs hatch in about 24 hours and fry become free swimming at about 48 hours. Fry will eat baby brine shrimp and are easy to raise.

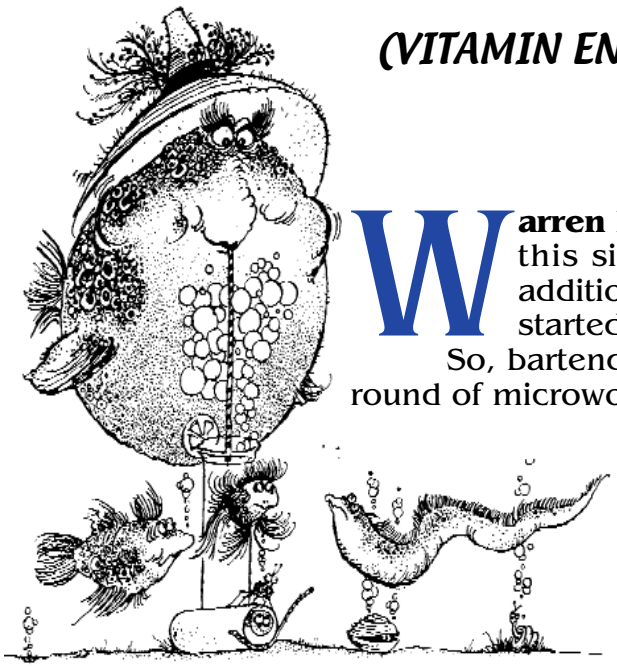
So go! go! go! get some Tic-Tic-Toes! Until next time.

Tony

John Todaro – BAS
From the Brooklyn Aquarium Society's publication
SCRUMPTIOUS MEALS & LIVE FOOD TREATS Compiled, Edited & Written by John Todaro

Drunken Oatmeal Culture or Beer Barrel Oatmeal

(VITAMIN ENRICHED FORMULA)



Warren Burke, a former member of the BAS, developed this simple culture medium for microworms with the addition of vitamin B12 and beer to help the yeast get started. He just couldn't settle on a name.

So, bartender, no matter what you call it - how about another round of microworms for everybody!

RECIPE

INGREDIENTS:

Starter culture for microworms.
1 Box of Gerbers® oatmeal baby cereal
2 Envelopes of Knox® unflavored gelatin
3 800 mg. vitamin B12
Water from a healthy aged aquarium
1/2 cup of stale beer at room temperature
1 pkg. Fleichmann's® Active dry yeast.

PREPARATION:

1. Empty the box of cereal into a large mixing bowl.
2. Add the 2 envelopes of gelatin.
3. Add the vitamin B12. Crush the tablets.
4. Mix dry ingredients with a plastic or wooden spoon.
5. Now add enough water along with the active dry yeast and enough beer to make a firm paste. The dryer the texture of the paste the faster the culture will begin.
6. Add the starter culture of microworms and stir them into the mixture. Don't worry about killing the worms. You won't.
7. Now add the paste to three plastic shoe boxes to 1/4 inch thick. Place the lids on the shoe boxes and set aside where the temperature is about 60˚ to 65˚F.

If you have extra culture left over, you can save it in a plastic container and keep it in the fridge to start a new culture within the next week. This way your cultures will be staggered and you will always have a vigorous culture crops ready to feed to your fry.

In about 48 hours after setting up a culture, you'll see millions of microworms starting to form and climbing up the sides of the shoe boxes.

FEEDING:

Scrape off the worms that have climbed up the sides of the container with either a popsicle stick, plastic playing card, etc., and serve immediately.

Ryan Curtis – BAS

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

Orange Eyed Blue Tiger Shrimp

Scientific Name: *Caridina cf cantonensis*.	Ideal Temperature: 72˚F.
Common Name: Orange Eyed Blue Tiger Shrimp	Hardness Range: 2 - 10 dkh.
Origin: South East Asia.	Ideal Hardness: 3 dkh.
Found in the wild: No.	Life Span: 1 - 2 Years.
pH Range: 6.2 - 7.2.	Size: 1/4" - 3/8"inchs.
Ideal pH: 7.2.	Gestation Period: 30 Days.
Temperature Range: 68˚ - 75˚F.	Diet: Omnivore.

BLUE TIGER SHRIMP HISTORY

The Blue Tiger Shrimp with orange eyes has not been around the shrimp keeping hobby for long. The wild type of these shrimp originates from South East Asia, and has been bred into these vibrant blue colors with orange eyes.

BLUE TIGER SHRIMP CARE

These shrimp are relativly easy to take care of. They can even be kept in water with high pH, but these are not ideal circumstances for them! As with all shrimp, it is recommended to keep a sponge filter in the aquarium to prevent potential baby shrimp from being sucked into it. These shrimp like very clean water, so no issues with this extra filtration.

BLUE TIGER SHRIMP DIET

The Blue tiger shrimp will eat algae, but it is recommended to also feed some food pellets to keep them fed. Feeding is only required once per day, especially once there are baby shrimp in the tank.

BLUE TIGER SHRIMP BREEDING

The blue tiger shrimp does not breed true. Its offspring will of course have the blue coloration but not all. They will all however have the orange eyes!

Ryan

Anthony P. Kroeger – BAS

SLOW & EASY

SNAILS IN THE AQUARIUM

Fish are the first thing that comes to mind when we think of an aquarium, but there are many other animals we can keep too. Every aquarist has had snails at one time or another, whether we want them or not. Many times, snail eggs or juveniles hitchhike into our aquariums on plants we bought or collected.

Regardless what you think of them, snails do have a place in home aquariums. They are interesting in their own way, hardy and easy to keep.

But what do you need to keep them? And what kinds are commonly available?

Snails need hard alkaline water with a pH of at least 7.0 preferably 7.2. A snail shell grows as the snail does. Their shell is made of calcium, a common element in hard water. Not so in soft water.

Soft and acid water will dissolve the calcium and kill the snails, hence their need for hard alkaline water. Most commonly available snails tolerate a wide variation in temperature easily, anything between 55˚ and 85˚F is fine.

Snails are generally considered scavengers. They eat leftover/missed food and rasp algae off submerged objects. In reality, snails are opportunistic feeders rather than scavengers. They eat whatever they come across: leftover food, fish eggs or an unnoticed dead fish. Snails will also eat soft plants, especially plants such as anacharis and hygrophilia. Generally they leave narrow leafed plants like cabomba and hornwort alone.

They usually do not bother swordplants or crypts except to rasp off algae, but they will eat soft dying leaves. Snails perform a useful function on madagascar lace plants: keeping the lacy leaves free of algae.

Snails can be kept in a fish bowl or a tank. Just keep their water fairly clean and they are happy. Filters are not necessary but certainly useful. Cover their home; snails can and will climb out if you don't.

Snails never bother anything; baby fish are fine with them. I use them to help clean my baby guppy tanks.

But be careful what fish you keep with them though; many fish, especially puffers and clown loaches, eat snails.

Snails perform a useful service (especially with livebearers).

They indicate water quality. Many guppy breeders keep them for this purpose. If snails die your water is too acid. If snails pull into their shells and refuse to feed, it's time for a massive water change to improve the water quality.

Evey pet store sells snails, but what kinds are available, and which are best for you?

Lets look at a few that are available. Any of the following work well and are easy to keep.

Mystery snails - *Pomacea bridgesii*

Grow to about the size of a small golfball. These snails come on many colors. Golden and albino are the most popular. They are good scavengers. They crawl out of the water to lay their pink eggs in a grape-like clusters above the waterline. They are available everywhere and are fairly cheap. This snail has very long antennae and prominent blue, red or black eyes.

Ramshorn snails - *Planorbarius corneus*

They are colored red, brown or black and may have black polka dots too. This is a small snail. It might grow to nickel size. It breeds like crazy. Once you have one, you will soon have hundreds. The eggs are covered in a transparent jelly and laid underwater on plants, rocks or even the glass sides of your tank, Extra ramshorns can be crushed to make great fish food.

Columbian striped ramshorn - *Marisa cornuarietis*

Thus is a very pretty snail with ivory and brown stripes. It grows to about 1 1/2 inches in diameter. This snail reproduces slowly. It's a very active scavenger. It does not destroy plants.

Apple snails - *Pomacea canaliculata*

These are large snails, easily reaching apple size. Not good for small tanks. They do eat plants. They can multiply fast. They are not legal in some states. Never release any snails into nature. Be a responsible aquarist!

For a critter in your tank: try snails.

The Practical Plant

PROPAGATING

Lobelia Cardinalis

Lobelia cardinalis, according to the books, is supposed to be an undemanding plant. I cannot say that this has been my experience. Perhaps this is because I purchased a dwarf form, but I cannot say because I have only owned the dwarf form. I went for this particular form so I could use it as a midground plant since it is supposed to top out at about 10" tall. It is a stem type plant with a propensity to get kind of bushy. Overall, it's a very decorative plant.

The specimen I obtained was fairly generous in terms of how many stems were in the bunch, so I planted them in three different aquariums. One went into my Guppy tank, another into my Discus tank and the last was placed in my African shrimp tank. The only one to prosper was the one in my African shrimp tank. I'm assuming (since all the tanks have good lighting and CO_2) that the Discus tank was too warm and the Guppy tank was too hard. In general, it is a good practice when purchasing a plant that you have no prior experience with to get enough to go into multiple tanks. This greatly increases your chances of success by finding a system in which it will be happy.

My African shrimp tank is a twenty gallon long. I am using Caribe Sea's "eco-Complete" as a substrate. I have a Whisper 30 hang on power filter. The aquarium is heated to 78˚F; the GH is about 60 and the pH is 6.8. Since the aquarium is only 12" tall, I chose a fixture made by Coralife called the "Aqualight T-5 double." I would describe the lighting on this aquarium as the "upper" end of moderate. Since the bio-load in this system is fairly heavy, and many of the other plants in this tank are slow growing species like Crypts and Anubias, I only supplement this aquarium with potassium and trace elements.

To propagate the plant, I treated it like any other stem plant and used cuttings inserted into the substrate. It is a fairly slow grower by stem plant standards, but the cuttings took root and prospered. Oh, I almost forgot to mention to you that this plant is not going to look like it does in pictures. The plant almost always appears in print in its emersed form which is a dark green with reddish coloring on the lower leaf surfaces. The submersed form is a light variegated green over the entire plant.

Izzy

Wayne S. Leibel

Reprinted from *Modern Aquarium*, Greater City AS, October 2016
Reprinted from *The Underwater News*, Pioneer Valley AS, February 2011
First appeared in *The Shoreline* Jersey Shore AS, March 2002

Why Hobbyists Should Write for their Club Journal.

We stand on the shoulders of others who come before us. This is no less true of the aquarium hobby than it is for most other aspects of life. We learn by hearing of or reading about other people's experiences. In the case of the beginning aquarium hobbyist, this is usually through books or slick magazines. But once having joined an aquarium society where hobbyists of all experiences and abilities meet and exchange ideas (and fish)!), our learning increases exponentially. This can happen via speakers invited to share their knowledge specifically because of their expertise in particular areas of the hobby or, better, through informal chat with members of the club over coffee or the auction table, or, yes, through club publications like Jersey Shoreline.

Although my major lifelong hobby interest has been cichlids, I find nuggets of useful information in virtually every talk I have attended, be it about guppies, bettas, or even marine fishes, or in conversation with other members about some weird fish they've spawned, or fielding a question or problem they might bring me (and more often than not I don't have a clue, but learn something from discussing!), or reading an article in the club journal, be it a short BAP report about some fish I have never kept, or a longer feature article. There is always something to be learned, and it is what keeps us vital in the hobby.

A club's publication is its lifeline to the membership and its lifeblood for information exchange. In my talks to various and sundry groups I always try to give hobbyists a pep talk on how what we do as hobbyists is important. I think, as a group, tropical fish hobbyists have a collective inferiority complex; we think that our experiences in captive rearing and spawning of fishes is unimportant - simply a "hobby" (with all the lack of seriousness that implies), particularly, relative to science. But nothing could be further from the truth! We have much to contribute, even to that serious activity we call "science." Let me tell you why.

These days, the number of professional ichthyologists and other scientists actively engaged in research on fish has dwindled in favor of more molecularly oriented research. That's where the action and money is these days! Fact is, too, most professional ichthyologists are great with the dead and pickled fish they study and name, and not so good with the living critters! (Though there are some exceptions, thankfully.) Also, with so few ichthyologists and so many fish, a lot of interesting observations just never get made: So many fish, so little time, so few professionals to do it!

Here's where we hobbyists come in. Our stock in trade as aquarium hobbyists is creating conditions that encourage our fish to spawn in captivity, where we can watch what they do at close range and learn from them. We do this for a variety of reasons: to accumulate Breeder Award points, to have young fish to sell at auction or to stores to help defray the cost of our hobby, or simply for the challenge and bragging rights of being the first to spawn some difficult or little-known,

seldom-kept, or new fish. But along with these activities comes the opportunity also to observe - really observe - what our fishes do, record what they do by taking notes on the conditions we spawned them under and the behaviors we witnessed, and to share that information with other aquarists either through brief BAP reports or better, through articles published in the club bulletin (or even national slick hobby magazines!). The information is important not just to other hobbyists who would like to learn how to spawn a particular fish, but also to science! Really!

Here's one (of several) examples of how hobbyists have contributed to ichthyology in a direct and important way. About 15 years ago, in the mid-1980s, some of us playing with South American cichlids of the genus *Geophagus* (eartheaters) noticed that one of the "species" appearing in the hobby and sold as "*surinamensis*" differed from batch to batch. Although all "forms" had blue and red longitudinal striping along their sides, and the same basic body shape, and all sifted sand for food, they differed in the coloration of their tail fins; some had flag stripes (alternating blue and red), some had spotted tails, and some of the spot-tails had black throats and others did not. We also knew they came from different river systems in South America, since, among others, **Ben Rosler**, (Metropolitan Pets), a knowledgeable local wholesaler, kept track of where they were collected and exported from: Colombia, Venezuela, Peru, Guyana, Brazil, etc.). At the time, ichthyologists (**J. P. Gosse**, 1974) who had studied the dead, pickled bodies of these "*surinamensis*" eartheaters, concluded that it was one very widely distributed species. A (then) newcomer to South American cichlid ichthyology, **Sven Kullander**, thought otherwise, and suggested that these were discrete, different species, not just various flavors of *Geophagus surinamensis*, in need of different species names. He thought the colorational and other differences (body shape, scale numbers, etc.) were different enough to justify splitting them as different species.

It was hobbyists who bred these fish that provided the final clue and proof: some of the popular forms were "immediate" mouthbrooders, and picked them up in their mouths immediately to incubate them to hatching, while other forms were "delayed" mouthbrooders, which pasted their eggs down on a rock, guarded them for a few days, then took them in their mouths for final incubation, and some were simply nonmouthbrooding "substrate brooders" who did the typical cichlid thing and pasted and guarded their eggs! Clearly, there was more than one species involved! And it was hobbyists who provided the crucial information. How did Kullander learn about this? There was no ichthyologist sufficiently skilled in getting live fish to breed in the aquarium, leastwise not Dr. Kullander. He didn't breed these himself, rather hobbyists did and wrote about their experiences in hobby magazines that Kullander had the good sense to be reading, and went "aha!"

In fact, Kullander and other ichthyologists have increasingly looked to the aquarium hobby community to provide observations of fish behavior they would never see in the wild. Have you heard about mouthbrooding severums! Or contact feeding pike cichlids? Of killifish who inject their eggs into cracks in rocks in fast moving streams? Or splashing tetras that jump out of the water to spawn on overhanging plants? Or bubblenest brooding catfish? or etc., etc., etc. The list goes on and on, and science would be ignorant of all if it were not for tropical fish hobbyists and the articles they have written about observations they have made in their home aquaria! We should give ourselves a huge pat on our collective back!

Ok, well maybe your experiences breeding this or that may not prove important or crucial to science (though you never know!), but I am certain someone, somewhere, would love to learn about them even if it is just to repeat them and rack up BAP points. Our hobby is, among other things, about generating and sharing information. I can think of no better chatter vehicle for doing this than a fish club, and no better way for sharing the information within and between fish clubs than through club publications, particularly in this age of the internet and websites, where club journals and your writings are posted on the web for all to access and learn from. So, please, really observe your fish, take good notes and SHARE them with the rest of the tropical fish community by WRITING FOR YOUR CLUB PUBLICATION.

Please write!

Anthony P. Kroeger – BAS

AQUARIUM PLANTS FOR BLACK THUMB AQUARISTS

I often hear people say "I have a black thumb, My plants always die!" or "The only plants I cannot kill are plastic ones!"

Despair not. The following plants are very hardy and almost impossible to kill, if you follow just two rules.

RULE # 1 Put them in water.
RULE # 2 Leave them alone.

Try the following Black Thumb approved plants and you'll have a beautiful green aquarium.

#1 *Anubias nana lancolata* or *Barteri*. Native to tropical Africa. Care is the same for all. Size ranges from 4" *nana* - 12" *Barteri*.

Most stores sell these in pre-potted form. Just put the pots on your substrate and forget about them, or you can tie the plants (without pots and medium) to drift-wood. They will attach themselves to it. Give them low light and no care. They grow slowly and are very hardy, Bountiful, indestructible and easy to find, buy and keep alive.

What more could you ask for?

#2 Willow moss - *Fontinaus* species. Native to the Northern hemisphere. Stems / clumps can grow up to 12", but usually grows wide rather than up. The simplest plant to grow and the hardiest. Place it on your substrate and forget about it. Keep it in low light. The only care needed is to trim it back when it grows too much. Deep green in color, bushy stems, an excellent baby / fry and spawning plant. Plus it's cheap and always available and next to impossible to kill. Black thumb certified for everyone.

It doesn't get any better!

#3 Duckweed - *Lemma minor*. Global distribution. Small 1/3" tri-lobed light green floating plant. No matter how fast you try to kill it, these plants will outgrow your efforts. Very fast grower, needs bright light and any type of water. Cheap and available everywhere. Excellent for shy and baby fish.

Duckweed rapidly covers all available water surface area. Vegetarian fish love to eat it too. Get this plant and you'll never ever kill it... it always comes back.

#4 Water Sprite - *Ceratopters thalictroides*. Native to Southeast Asia. Grows to 18" high. Light green finely serrated or broadly serrated leaves. You can plant it or leave it to float. New plants form on the leaf edges. Fast grower under bright light, this is a great fry saver plant and works especially well with livebearers. Good for shy fish too! Cheap and available everywhere. A pretty and tough plant!

You gotta try this one!

#5 Java Fern - *Microsporum pteropus*. The ultimate black thumb plant. Deep green, broad leaves and always available, slow grower. It can grow in substrate or attached to wood. Needs low light. I've never met anyone who has killed this plant except for taking it out of the water and drying it in the sun on concrete! Extremely tough and hardy. Impossible to kill in water unless you boil it! Look no further; this plant is a black thumb buster!

Try any of these 5 plants! They will grow for you, even if you have the blackest thumb.

Buy the way if you do manage to kill any one of these plants, let me know how you did it.

I've never met anyone who could kill them as long as they were in water.

Try these plants; they're guaranteed to turn your black thumb into a wet green thumb.

Welcome to the world of aquatic gardening; these plants will start you on your way!

Happy green thumb plant growing.

Tony

Breeding the Butterfly Goodeid

Ameca splendens

The keeping of the butterfly goodeid, *Ameca splendens*, in captivity is easy. It has been established in the hobby since the 1970s and tolerates a wide range of aquarium conditions. This is good, because in the aquarium is the only place that you will be able to see these beautiful fish. They are, unfortunately, believed to be extinct in the wild.

It is one of the many species of the family *Goodeidae* that are on the C.A.R.E.S. preservation priority list, and is the only species in the genus *Ameca*.

I obtained my specimens at the 2011 American Livebearer Association convention in Cleveland, Ohio. I purchased two pairs in the vendor room as soon as I saw them available when I arrived. I had been looking for these fish for about a year, and it was one of my highest priority reasons for attending the convention.

The butterfly goodeid is a robust species, and can compete with fishes that one might never think it would be able to stand up to. I split my two pairs up, placing one pair into an 80-gallon community set up, while the other pair was placed in a 29-gallon aquarium. The male butterflies in each tank became the masters of their domains. While that wasn't a very impressive feat in the 29-gallon tank, which only contained about 15 *Tanichthys micagemmae*, I was thrilled to see the male in the 80-gallon community display fending off much larger angelfish and T-bar cichlids, *Cryptoheros sajica*, as well as pearl gouramis and other fishes twice his size. And while he was aggressive in defending his territory, no fishes seemed to be injured, including himself.

The male aggressively displays for the female, showing off his unexpectedly stunning coloration. The body is gray with silver iridescence and black spotting. There is a wide black bar that runs laterally down the side of the fish from the eyes to the base of the tail. The dorsal, anal and pelvic fins are edged in black. The tail has a black crescent that is set off by a brilliant yellow border. When excited, the black and yellow hues of these fish become intense, and despite their smallish size - males only reach about 3 inches - they

stand out from across the room.

Care of the butterfly goodeid is not a challenge. They adapt to a wide range of water conditions, as long as extremes in pH and hardness are avoided, but they prefer slightly alkaline water. They are voracious feeders and eat anything offered. They are also good at grazing on hair algae in the aquarium, helping to keep its growth in check.

Breeding this species does not prove difficult either. Unlike their cousins, the *poeciliids*, *goodeids* must provide sperm for each batch of fry. Once a male has successfully fertilized the female, fry will be born in about 55-60 days at typical aquarium temperatures of around 75˚F. The fry can be large, up to about 3/4", as they do receive some nourishment from the female during gestation via a ribbon shaped umbilical cord-like structure called the trophotaenia, which is unique to goodeids. This is another difference from the *poeciliids*, whose females provide no nourishment to their young while still unborn.

Once a male has successfully fertilized the female, fry will be born in about 55-60 days at typical aquarium temperatures of around 75˚F. The fry can be large, up to about 3/4", as they do receive some nourishment from the female during gestation via a ribbon shaped umbilical cord-like structure called the trophotaenia, which is unique to goodeids.

The fry will take crushed flakes, newly hatched brine shrimp and other suitably sized foods immediately. If fed several times daily and given weekly 50% water changes, the young fish will be sexable in about 3-4 months or so. Females may give birth to their first born by 5 months of age, but usually at a little older. They are no problem to raise, but grow slowly. They can be housed together with similar sized fishes for group rearing. The butterfly goodeid is an attractive species that can be an asset in algae control.

Given adequate space and water conditions, these fish make a great addition to the aquarium.

CATFISH CONNECTIONS

THE AFRICAN SHOVELNOSE CATFISH

Paranchonoglanis macrostoma

Last time I introduced myself and some unique relatives to you. This time we'll travel to Nigeria to meet my cousin, the African shovelnose catfish. The African shovelnose comes from the Niger River and is usually exported from Lagos Nigeria.

Growing to about 9" inches my "cuz" needs some space, a 55-gallon tank at least.

He's a flashy dresser with a pinkish purple body, white belly overlaid with chocolate brown spots. A rough and tumble kind of guy, any reasonable water quality suits him fine. He doesn't like high ammonia or nitrite though. Who does? But it is best to change 30% of his water weekly. "Cuz" likes it warm, coming from open African waterways; 74 - 82˚F is best. Do not ever keep him cooler than 74˚F; at 72˚F, he'll get a terrible case of ick. which is a disease that he has very little immunity to at cooler temperatures and that is very hard to cure. Ick is a bad problem for him and usually even a moderate case of it is terminal.

African shovelnoses are very active day and night! He only sleeps in the afternoon, but he'll wake from his siesta if you decide to feed him. He's always awake for food!

Being a real chowhound, he eats every food offered but shows a special liking for old fashioned brine shrimp pellets with which he will stuff himself to the point of bursting. His belly will look like he swallowed a marble.

Of course with a big mouth neons, guppies and the like, he considers snacks. So only keep him with fish his own size. At 9" inches full size, "Cuz" can easily swallow a 6" inch neighbor during his nighttime wanderings! So keep him with friends his own size.

Of course, with a big mouth, neons, guppies and the like, he considers snacks. So only keep him with fish his own size. At 9" inches full size, "Cuz" can easily swallow a 6"inch neighbor during his nighttime wanderings! So keep him with friends his own size.

Coming from big rivers, "Cuz" loves water movement, always use oversize power filters on his tank and powerheads for current.

Other than floating plants, sand and a cave, decorations can be minimal. "Cuz" will arrange everything to his liking regardless of what you do.

African shovelnose earn their name everyday, constantly digging in the substrate for food. They will dig very deeply for a choice tidbit. Actively swimming around mornings and nights, he usually siestas mid-day.

This athleticism is not limited to the bottom. "Cuz" swims all over the tank and excels at pole vaulting out of it, so always cover his tank or you will not enjoy his company for long.

Until the African shovelnose gets to about 4" inches, you can keep him with his own kind, but above that size he gets territorial and should be kept alone. Serious "biting" incidents can occur if you do not.

"Cuz's" whiskers are quite long and indicate the water quality he is in. If your water is too acidic or has too much ammonia, his whiskers will seem to disintegrate and become shorter. If this happens, change 30% of his water daily for one week. His whiskers do grow back, but it takes a while to do so.

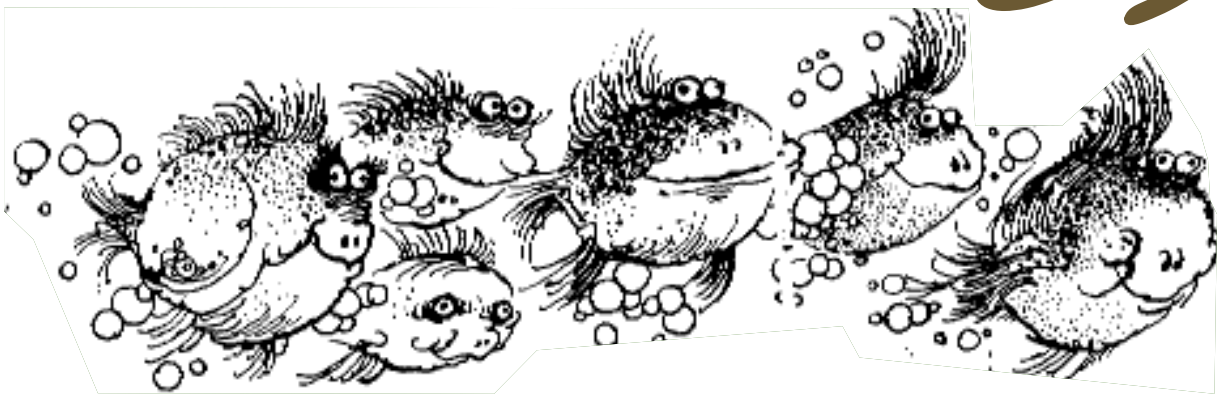
African shovelnose have very hard and spiny pectoral and dorsal rays. They can lock these fin spines easily into nets and become a nightmare to remove when they snag themselves this way. So always use a glass or plastic container whenever you move "Cuz" anywhere. Be sure when you bring him home from the store that he is triple bagged too, or you will have a leaking mess on your hands before you leave the parking lot. "Cuz" has not bred in captivity yet.

African shovelnose will serenade you with growling, buzzing and barking songs on occasion too! "Cuz" likes to sing!

Usually available at a reasonable price, my "cuz" is lots of fun and interesting too! Try him.

Synodontis dreams!

Sy



Peter McKane of England.
From his website www.helpthefish.org Aquarticles.com.
Pioneer Valley AS, *Underwater* Newsletter, Nov, 2012

FISH ACCLIMATIZATION

The acclimatization of fish is an incredibly important process. Without it, fish that you introduce to your tank, whether it is a new setup or not, will become severely stressed and as a result may die or suffer severely reduced life expectancy.
The process itself is incredibly simple, and if more people stuck to it, then many stress-related deaths could be avoided.

TRANSPORT

Acclimatization begins where you first pick up the fish. From the moment they leave their tank, whether it is from a private supplier, a local fish store or even out of the box that they were delivered in, the fish must be kept as still as possible. If you are driving home with your fish, then hold the fish in its box or bag in the air between your legs. This means that any sudden acceleration or stopping will mean that the fish will sway and not be bumped up against the side of their container. The container should also let in as little light as possible. Most fish stores will wrap a bag containing fish in old newspaper, and this is an excellent practice because dark conditions make fish suffer less from stress. If your journey back to the new tank for the fish is long, make sure that you open the container at least once every thirty minutes to let in fresh air. This is not sufficient to keep a fish happily alive for more than a few hours, because the container used to transport the fish will be far below the recommended size to house the fish permanently. This reason alone is enough to discourage buying fish that are delivered by post, unless they are sent via a courier to arrive preferably within 12 hours, but no more than 24 hours.

DARKNESS

Dark conditions make it much less likely to stress fish to the point of weakening their immune system and making them susceptible to illness. Make sure that throughout the process of moving the fish into its new aquarium, the fish sees as little light as possible. Draw the curtains in the room and turn off any aquarium lights.

Obviously you will need to be able to see what you are doing, but as long as at least the aquarium lights are turned off, then your fish will feel a lot happier about everything that is going on.

TEMPERATURE DIFFERENCE

Fish generally are very intolerant of rapid changes in their water conditions. A sudden change in pH or KH can result in stress and illness. However, by far the most important factor to consider is the change in temperature. A five degree sudden change in temperature can be enough to cause most fish so much stress that they are likely to die within a day of the change. For this reason, we will always float fish. If you have ever seen your local fish store on the day of a delivery, you will hopefully see that there are many bags with fish floating in the tanks that

they will be kept in until sold. Fish stores have a lot to lose if a whole batch of fish suddenly dies from stress, and so they will usually take care to acclimatize their fish correctly. Floating fish in bags or containers such as plastic boxes or breeding isolators means that they will gradually become accustomed to the temperature of the tank. A fish should be floated in darkness for at least fifteen minutes. I personally float my fish for anything up to thirty minutes. While it seems to make sense to float a fish for as long as possible, to reduce the stress of transportation and temperature difference, don't forget that the fish is currently in a rather cramped environment, and a balance of introduction speed to temperature acclimatization needs to be found. For me, thirty minutes is perfect.

Floating fish in bags or containers such as plastic boxes or breeding isolators means that they will gradually become accustomed to the temperature of the tank. A fish should be floated in darkness for at least fifteen minutes. I personally float my fish for anything up to thirty minutes.

It is also important to remember that even if the water in the transport container feels like it is the same temperature as your own tank, your fish will like a rest from the transport itself, and temperature is not the only thing to consider.

WATER CONDITIONS

Now that your new addition is used to the temperature of your aquarium, you will need to gradually add small amounts of water from your tank to the transport container. If the transport container currently has a fish in four cups of water, then you should add one cup of water from your own tank to this container every five to ten minutes. You should aim to add, gradually, the same volume of water that is in your transport container from your own tank over a period of fifteen to twenty minutes. Once you have done this, then it is on to the method of introduction.

INTRODUCTION

Many fish stores use the same water and a large filtration system over many tanks. This is more efficient for the store and easier to maintain than having many individually filtered tanks, and as long as there is no disease in the water, fish kept in a system like this tend to thrive. However, always be aware that a single sick fish in one tank in a fish store could indicate that the disease is present in all tanks. The last thing you want to do is introduce a stressed and disease carrying fish into your own setup. The disease itself may be present in your own tank, like ich, but will be dormant because your fish are healthy and resistant. Keep in mind that your new additions, no matter how well transported, will be stressed, and therefore vulnerable. It is always recommended that if you are introducing a new fish to your tank that you do not introduce any new water to your own setup.

Even if the fish you introduce is perfectly healthy, the water may not be. Therefore, once you have gone through the temperature and water condition acclimatization, you should catch your fish in a net and then add them to your tank. You should also leave the lights off for at least an hour after doing this. This particular step must, however, be ignored for some types of fish. Puffers, for example, must never be taken out of water because if they inhale air it is usually fatal. In the case of fish that must be kept under water at all times, it is recommended that you introduce as little of the new source water into your tank as possible. You should aim to add twice the volume of water in the transport container from your own tank, and then use a cup just big enough to hold the fish safely to take it from its transport container and add it to your setup.

QUARANTINE?

If you are a keeper of marine fish, then your fish are not only valuable as lives under your responsibility, but also in terms of your wallet. Those aquarists who keep expensive fish swear by enforcing a strict quarantine of all new fish. This is done by introducing the newly acquired fish in a separate tank setup designed to be as close to the final conditions that the fish will eventually be introduced to, but without the risk of contaminating existing stock with diseases. Even if your fish are not expensive in terms of how much they cost, you may want to consider doing this for all fish that you wish to introduce into your tank setups. It is, by far, the safest way of ensuring that you do not inadvertently introduce disease into your precious tanks. However, many aquarists, especially beginners, will not have the equipment necessary for this, and as such will simply have to take the risk of introducing fish directly into their target tank. This whole process, not including transportation, usually takes between thirty minutes to an hour. Considering the benefits of healthy and stress-free fish, it is something that can hardly be seen as a chore.

Please follow these guidelines each time you introduce fish to your tank, but do remember that no matter what precautions you take, fish do stress easily, and if it is a weak fish then there is little that you can do to keep it alive. Make sure to pick the strongest and healthiest fish from the stock that is available to you, and if there are only sick or weak fish to choose from, then wait for a new delivery. This sounds harsh, as the fish you leave behind may very well die and not be sold, but this will only encourage breeders and fish stores to house their fish properly and keep their fish as healthy as possible.

Please follow these guidelines each time you introduce fish to your tank, but do remember that no matter what precautions you take, fish do stress easily, and if it is a weak fish then there is little that you can do to keep it alive. Make sure to pick the strongest and healthiest fish from the stock that is available to you, and if there are only sick or weak fish to choose from, then wait for a new delivery. This sounds harsh, as the fish you leave behind may very well die and not be sold, but this will only encourage breeders and fish stores to house their fish properly and keep their fish as healthy as possible.

Anthony P. Kroeger – BAS

KING OF THE CORYS

Every cory and catfish collector aspires to have and own Scleromystax barbatus, commonly known in the hobby as Corydoras barbatus. This fish is " King of the Corys" for many reasons.

The most beautiful and commonly available member of a closely related family "*Barbatus*" are best described with superlatives, a must have fish.

This is one of a very few Corydoradinae family members that are sexually dimorphic in both color and finnage.

Males have dark chocolate brown spots, polka dots and scribble markings overlaying a golden yellow body. The back half of the male's body has an irregular broad wavy chocolate stripe running along the lateral line to the tail with random chocolate dashes and dots above and below. A broad golden yellow stripe runs from snout to dorsal fin.

All fins are long, extended and broad, especially the dorsal and pectorals. The first pectoral ray is golden with a black stripe behind it. Dorsal and caudal have chocolate brown spots. The dorsal contains small gold dots too.

Females are black and white polka dotted and marbled with only occasional hints of gold color. Males sport spiny bristles and color patterns that make this fish easy to sex.

Barbatus are giants in the cory family. Native to Southeast Brazil, they reach about 4" inches!

Think of this fish as the "Ferrari" of corys. Most corys have a cute rounded VW bug shape, not this fish. Elongated and long snouted, this fish is not your typical cory. This fish has huge wing-shaped pectorals and a long dorsal. The king of the corys is demanding of his aquarist subjects; this is not your average "throw it in the tank and forget about it cory" in any way!

SO WHAT DO YOU NEED TO KEEP THE KING HAPPY?

Let's talk H_2O first. *Barbatus* comes from cool, flowing, clearwater streams in Southeastern Brazil. The water is soft and acidic, but not blackwater. Being clear, the water lacks the dissolved tannins of the Rio Negro. They do not like or want tannin tinted water. A pH of 6.5 - 6.8 is good. Use R.O. water to help with softness. Being a cool water fish, the king needs no heater. This fish quickly suffers at 76˚ - 79˚F. It prefers 68˚ - 70˚F. Water temperatures down to 59˚F are not uncommon in its natural environment. Keep them cool!

I change 30% of their water weekly. Kings are shallow water fish. They rarely are found in deep water, most often in water between 8" and 20" inches deep. - sometimes even in water only an inch or so deep.

Knowing this, use a long shallow tank to give them room. A 55-gallon tank will house a couple of trios, but no more. Forget about keeping *Barbatus* in any tank smaller than a 55-gallon. Males are brutal in defending their territory against other males. The king can definitely hold his own!

That being said, you must "decorate" his home accordingly.

Use driftwood, larger stones, slate and PVC pipes to make caves and hiding holes. Set them up so as to break up sightlines between the territories.

Use a few leaves of the substrate and a few plants such as swordplants if you want, but neither is really necessary. If you use leaves, use only leaves that already have had all the tannins leached out of them.

Barbatus are bulldozers! Their long snout allows them to dig deep and their constant foraging roils the substrate thoroughly. As such, particular attention must be paid to their substrate type.

Use fine sand, but be sure it is not sharp; their whiskers can easily be damaged or destroyed by sharp sand.

Barbartus like a moderate current. Use a power filter and powerhrads, but do not aim the powerheads' current or the filters' return flow at the substrate. Rather, aim it midwater so the current circulates above and parallel to the substrate.

Barbatus must always be kept in top quality water. No ammonia, nitrites or nitrates are tolerated. Keep your substrate clean. If you don't, you'll find your kings dead due to bacterial infection brought on by a dirty substrate. If this happens, you will usually lose the infected fish.

Barbatus are meat eaters! They love worms of all kind, high protein frozen foods such as daphnia, tubifex etc.

An interesting treat is to watch these fish root live black worms out of the substrate.

Due to their cool temperature requirements, this is not the best fish for a community tank. It also does not go looking for trouble, but it can certainly hold its own if it encounters trouble.

Geophagus brazilensis, various *Gymnogeophagus* species, black tetras, swordtails, tetras and bloodfins make good tank mates.

Just remember male *S. barbatus* hate each other. Usually they will settle into a truce, but if they go at each other and like cats start a cat fight, you'll have to remove the weaker male or he will decline and die.

TWO FINAL BITS OF INFORMATION:

#1 *Barbatus* expel a toxin when stressed. It will kill any fish in a bag with it and maybe even itself, if it releases this toxin. So all *barbatus* must be bagged

individually when moved from the store to your home. This fish must also always be triple bagged or better yet moved in a plastic or glass container; their fin spines will pop bags fast!

#2 Always handle this fish with great care! It will gladly jab its fin spines into your hand and inject a toxin into you. Your hand will sting as though you have been stung by a bee! Ouch! Plus, the spine edges are sharp and reverse edged, so they tear your skin on the way out. Warm water breaks down the toxin, but any sting from a *barbatus* is very painful.

Barbatus are not for beginners, but for an experienced hobbyist. They truly are king of the corys. If you consider yourself an experienced hobbyist, try some.

Happy fish keeping!

Tony

The Exchanges

Bucks County, PA. ***The Buckette*** [December]
Had a reprint article from the Greater Pittsburgh Aquarium Society of 03/14 issue of *Finformation* by **Eric Bodrock** on "*Spawning Hypancistrus sp. L 333 (pleco type catfish).*" The article was very detailed in its description of environment, food, water and spawning time frames.

EIAA [Eastern Iowa] ***Fin Flap*** [December]
A great article, very detailed, with pictures, about a young couple who expanded their home to include a room for an in-door swimming pool that they then converted into a 10,000 gallon koi pond.

In their Exchange Editor Report, they mentioned two articles from our Editor **John Todaro** that were listed in the October 2016 Northeast Council of Aquarium Societies Newsletter, titled "*One of a Kind*" about the Buttterfly fish *Pantodon buchholzi* and its accompanying Species Profile.

Greater City ***Modern Aquarium*** [November]
Their speaker is **Michael Barber** and his topic was *The Perfect Fishroom*. Michael Barber will be our speaker in January 2017 and he will have a different topic for us.

GPASI [Pittsburgh] ***FINformation*** [December]
Article by **Joe Doyle** titled "*Fundulus grandis grandis – Spawning a Giant.*" This killie species was found in a ditch in Tampa, Florida. It is a large killie that can grow up to seven inches; their eggs are laid on artificial mops and take 30+ days to hatch.

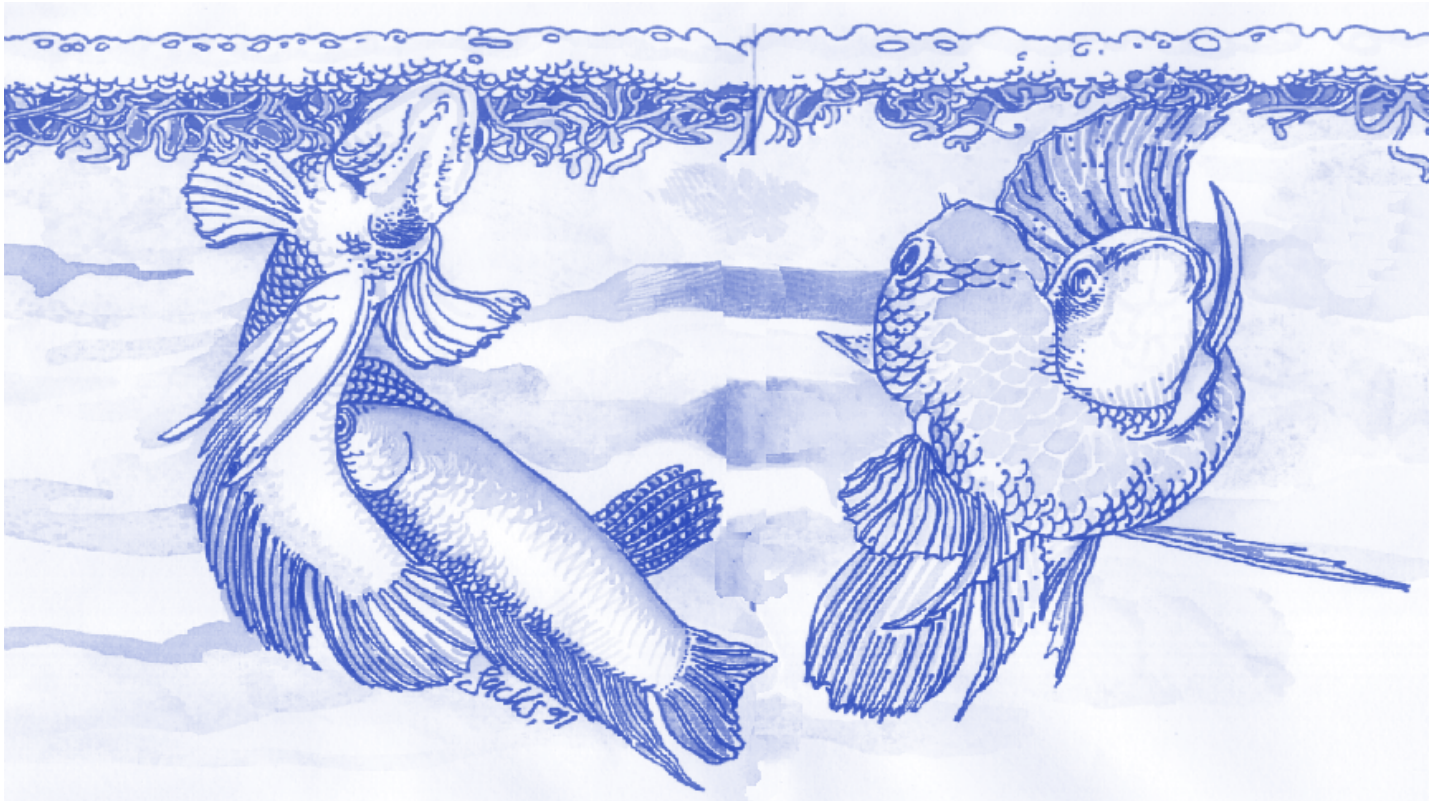
Kitchner-Waterloo A.S. [Ontario, Canada]
Fins & Tales (November/December)
"*The Story of Fundolopanchax Spoorenbergi*" by **Karen Murray** is a very informative about raising, breeding and sharing information on this rare killifish.

Missouri A.S. ***Darter*** [December]
The Missouri A. S. will be hosting the American Livebearer Annual Convention this coming May. *Fish Room Efficiency Part 2 Three Great Fish Foods* by **Jack Heller**. The three fish foods Jack wrote about:
1)Baby Brine Shrimp; 2) Prepared Frozen Foods; 3) Daphnia. Jack must know what he wrote about because in the WAKO killifish show (stated as the largest in the United States), he took Best of Show out of over 300 entries with his *Chromophyosemion lugens*.

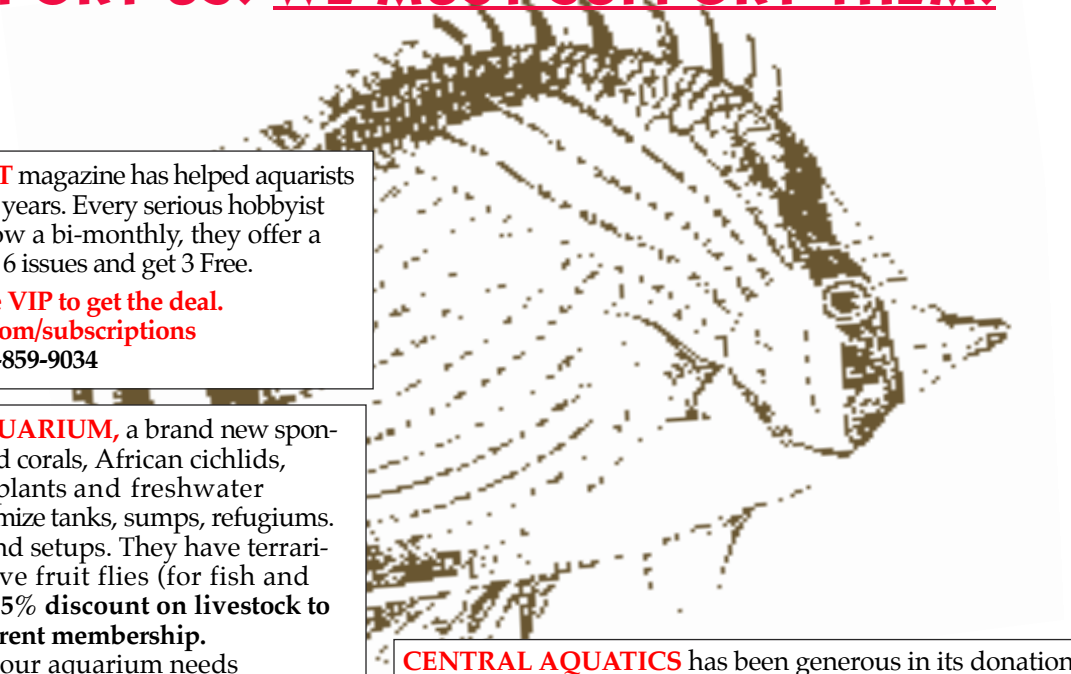
Raleigh, N.C. A. S. [December]
Interesting article about freshwater dwarf shrimp with in-depth info on the species and the environmental parameters needed to reproduce, which includes behavior, care and feeding.

Tampa Bay A. S., TBAS [December]
The History of TBAS – 25 Years: Written by a Founder, **Bill Shields** with **Al Knowles**. Great article that goes into the trials and tribulations of starting an aquarium club and what is needed by its members and sponsors. They held an 11 day Florida State Fair Aquarium Beautiful Competition. They also participated in the American Killifish Association convention in 2000 and again in 2006, the North American Native Fish Association in 2009 and in 2015 they hosted the World Guppy Show which boasted attendees from Europe, South America, and Asia. This same club hosted local events to help people in their area. An amazing accomplishment for any aquarium society but one that began in 1995 is truly astounding.

Anyone who wants to receive a copy of any of the above articles please let me (Exchange Editor) know by calling the club Hot Line, leave an email or come to a meeting.
I will be happy to send it to you.



SUPPORT OUR SPONSORS. THEY SUPPORT US. WE MUST SUPPORT THEM!



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

THOUSAND ISLAND AQUARIUM, a brand new sponsor offering saltwater fish, and corals, African cichlids, freshwater fish, freshwater plants and freshwater shrimps, has a shop to customize tanks, sumps, refugiums. They do tank maintenance and setups. They have terrariums with dart frogs, and live fruit flies (for fish and amphibians). **They offer a 15% discount on livestock to all BAS members with a current membership.**

A great shop for your aquarium needs
THOUSAND ISLAND AQUARIUM
1963 Utica Ave. Bklyn, NY 11234
(b/t Ave. K & Ave, L)
(718) - 241 - 6688
Mon - Fri 11am - 8pm • Sat 11am-8pm • Sun 12pm - 8pm

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 with current BAS membership card.** A really great aquatic shop. Well worth the trip.

ABSOLUTELY FISH
1080 Route 46 W., Clifton, NJ 07013
Ph: **1 (973) 365 - 0200**
Open 7 days a week:
Mon - Fri 12AM - 9PM • Sat 12AM - 8PM • Sun 12AM - 5PM

AQUARIUM VILLAGE has 4 to 5 livestock shipments of freshwater, saltwater fish and corals every week, to offer you a great selection at a great price, with 6,000 gals. of stocked tanks, 1,000 coral frags and 2 tons of live rock in stock at any one time. Saltwater is their specialty, but you'll also see a large selection of African cichlids, 1,000 gals. of tropical fish, goldfish, koi and plants and a wide range of equipment, accessories and supplies to fit all your needs. They also do installation and maintenance. A well-trained staff is on hand to answer questions and provide quality service. Richard, the owner, also welcomes group buys and offers.

This is a must visit store!
AQUARIUM VILLAGE
461 Old Country Road, Westbury, NY 11590
Ph: **(516) 333-0682 • www.nyAquariumVillage.com**
Mon - Sat 11-9 • Sun 11-6

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

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

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 issues.
For more information go to
WWW.AMAZONASMAGAZINE.COM

SUPPORT OUR SPONSORS. THEY SUPPORT US. WE MUST SUPPORT THEM!

MANHATTAN AQUARIUMS has one of the largest selections of marine fish & corals on the East Coast. You should check them out for all your Marine Fish & Coral needs.

BAS members get a
10% Discount with 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

PETLAND DISCOUNTS, the complete pet store, carries a full line of pet supplies for fish, dogs, cats, birds, reptiles and small animals, also a variety of fish, birds, small animals and reptiles. Open 7 days a week. Locations in New York, New Jersey & Connecticut. Over 15 stores in Brooklyn.
See the white pages, for a store near you.
Shop on line at:
WWW.PETLANDDISCOUNTS.COM.

PACIFIC AQUARIUM & PET INC., in Manhattan's Chinatown, carries ornamental goldfish, koi, freshwater fish, & aquatic plants. **BAS members get 10% discount with current card** (Discounts not to be combined with other specials). They have a full line of aquarium supplies. You can order custom size tanks.

PACIFIC AQUARIUM & PET INC.
46 Delancy St., NY, NY 10002
Ph: **1 (212) 995-5895**
Open 7 days a week and all holidays 10AM to 7:30PM

REEF NUTRITION Inc. Advanced Fish Feeds not only include natural, color-enhancing 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, Reef 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

CARIBSEA - From marine and reef community aquariums, African cichlid aquariums to planted aquarium substrate, you can count on Caribsea. Trusted by hobbyists and professionals alike since 1972. They have 280 products to help make you a better hobbyist.

Go to their web site to download their latest catalog or product flyers, videos and directions or to contact them with questions at
WWW.CARIBSEA.COM

WORLD CLASS AQUARIUM has been serving the hobby since 1986. *New Yorker Magazine* recognized them as the *"best aquarium supply store in the five boroughs."*
You'll be pleased to know that they:
- Offer a large selection of freshwater, marine fish, corals, plus a full line of aquarium, bird, and small animal products.
- **They give a 10% discount to BAS members with a current membership card.**
- Carry a selection of large and small tanks and cabinets.
- Have a marine biologist on staff.
- Design and install aquariums for educational institutions.
- Do maintenance for home or office aquariums.
- Build glass tanks and sumps to your specifications.

If you're into birds, check out their selection of hand-fed baby parrots, African grays, cockatoos, macaws, Amazons, conures, parakeets, and canaries.

Call or stop by to see what new babies have arrived!

Owned by two hobbyists, **Allan** and **Robert**, who offer a personal touch and pride themselves on "world class" quality. They're always available to answer questions.
You can also subscribe to their Newsletter.
Visit **www.WorldClassAquarium.com** and sign up.

WORLD CLASS AQUARIUM
2015 Flatbush Ave., Brooklyn, NY 11234
Ph: **(718) 258-0653** • Fax: **(718) 258-4637**
Store Hrs: Fri - Sat 10AM - 7PM • Sunday 10AM - 6PM
MON - THURS 10 AM- 8PM

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

Please Patronize Our Sponsors.
They support us; we must support them.
Tell them you saw their ad in the *Aquatica*.

Please Patronize Our Sponsors.
They support us; we must support them.
Tell them you saw their ad in the *Aquatica*.

Please Patronize Our Sponsors. They support us; we must support them.
Tell them you saw their ad in the *Aquatica*.

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, door prizes, raffles, and fish auctions. All meetings are free to members. Visit us on line:
WWW.BROOKLYNAQUARIUMSOCIETY.ORG

NAME_____OCCUPATION_____

ADDRESS_____CITY_____STATE____ZIP_____

PHONE (DAY) _____(EVE)_____(FAX)_____

E-mail Address_____

TYPE & LENGTH of MEMBERSHIP: (CHECK ONE)

INDIVIDUAL				FAMILY				[ ] $15 STUDENT 1YEAR
1yr. $20	2yr. $36	3yr. $51	4yr. $68	1yr. $25	2yr. $45	3yr. $63	4yr. $85	(UNDER 18 YEARS)

*If family membership, please list all family members. **Only first two listed will have voting rights.**

1_____ **2**_____ **3**_____

4_____ **5**_____ **6**_____

Number of tanks [ ] marine [ ] freshwater [ ] Do you breed fish? [yes] [no]

If yes, what types do you breed:_____

_____

Special interest (if any)_____

_____

How did you hear about BAS [friend] [dealer] [flyer] [*Aquatica*] [mag ad] [online] **other**_____

To volunteer check [yes] [no] A board member will contact you if you check yes.

On occasion, the Brooklyn Aquarium Society uses its mailing list to send notices of interest to our members.
If you **DO NOT** wish to receive these mailings please check here [ ]

Official use

Member number:_____ Type of membership [F] [I] [S] Date paid:_____ Board approved date _____
Amount paid:_____ Renewal/member since_____