



AQUATICA

THE ONLINE JOURNAL OF THE BROOKLYN AQUARIUM SOCIETY
VOL. 30 MAY ~ JUNE 2017 No. 5

Lionfish - *Pterois volitans*





106 YEARS OF EDUCATING AQUARISTS
AQUATICA
VOL. 30 MAY - JUNE 2017 NO. 5
CONTENTS

PAGE 2 THE AQUATICA STAFF

PAGE 3 CALENDAR OF EVENTS.
BAS Events for 2017

**PAGE 4 THE RESPONSIBLE
AQUARIST. PART 4.** Lionfish are now
in the Atlantic Ocean and are currently a
major problem, but certainly not the only one
ANTHONY P. KROEGER - BAS

PAGE 6 SPECIES PROFILE. *Pterois* Spp.
The Lionfish
JOHN TODARO - BAS

PAGE 7 LIONFISH RECIPES. Fried Bahamian Style,
Tempura lionfish and lionfish tacos.
www.lionfishhunters.org/Recipes.html

**PAGE 8 RAISE THE FLAG - LIBERTY MOLLIES
POECILIA SPHENOPS.** The breeding and care of this
American native fish.
ANTHONY P. KROEGER - BAS

**PAGE 10 PSEUDOTROPHEUS SP. MSOBO
A BREEDERS REPORT.** This fish is a mouthbrooder
and is native to the rocky coastline of Lake Malawi
DON WEGER - GCCA

**PAGE 12 TERRIFIC TETRAS - PART 5 - THE
BLACK NEON TETRA.** Black neons are commonly
bred in both Florida and the Far East and are available
everywhere at cheap prices.
ANTHONY P. KROEGER - BAS

PAGE 13 SPECIES PROFILE. The Black Neon Tetra,
Hyphessobrycon herbertaxelrodi.
JOHN TODARO - BAS

**PAGE 14 RECIPE - MOSQUITO FARMING,
TRICKY BUT IT CAN BE DONE SAFELY.** Live
food is great for conditioning fish for breeding;
mosquito larvae is among the best live foods.
JOHN TODARO - BAS

PAGE 16 GHOST SHRIMP. An American shrimp that
has been in the hobby for years. Often sold as a
feeder shrimp.
RYAN CURTIS - BAS



PAGE 17 THE PRACTICAL PLANT.
This month Izzy discusses the care
and propagation of *Cryptocoryne*
griffithii
Izzy Zwerin - BAS

**PAGE 18 NEW & RARE FISH TO
LOOK FOR.** Tony gets to see many
new fish coming into the hobby, he
has highlighted a few of them.
ANTHONY P. KROEGER - BAS

**PAGE 19 THE BLACK TETRA,
GYMNOCORYM BUS TERNTZI.**
An over view of the stunning fish
from the Rio Guapore in Bolivia.
MIKE HELLWEG - MAS

PAGE 22 THE PRACTICAL HOBBYIST. Tips
and tricks learned over 50 years of fish keeping.
MIKA ZAJAC - MCAS

**PAGE 24 SMORGASBOARD IN YOUR
BACKYARD.** Your back yard is full of fresh food
to feed your fish and it is as fresh as you can get.
ANTHONY P. KROEGER - BAS

PAGE 26 THE STRIPED BARB, BARBUS LINEATUS.
There are fish which are pretty due to their simplicity.
The striped barb is one of those fish.
ANTHONY P. KROEGER - BAS

PAGE 27 BREEDING CORYDORAS PANDA.
A BAP report on breeding this little catfish.
SCOTT WIERSEMA - EIAA

**PAGE 28 GET TO KNOW OUR SPONSORS.
SHOP OUR SPONSORS FOR ALL YOUR
AQUATIC NEEDS.**

PAGE 30 SPONSORS ADS.

PAGE 32 MEMBERSHIP APPLICATION.



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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:

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BROOKLYN AQUARIUM SOCIETY

CALENDAR OF EVENTS ~ 2017

MAY 12 Giant Spring Auction ~ Freshwater fish, plants, marine fish, aqua-cultured corals & dry goods, including a brand 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.

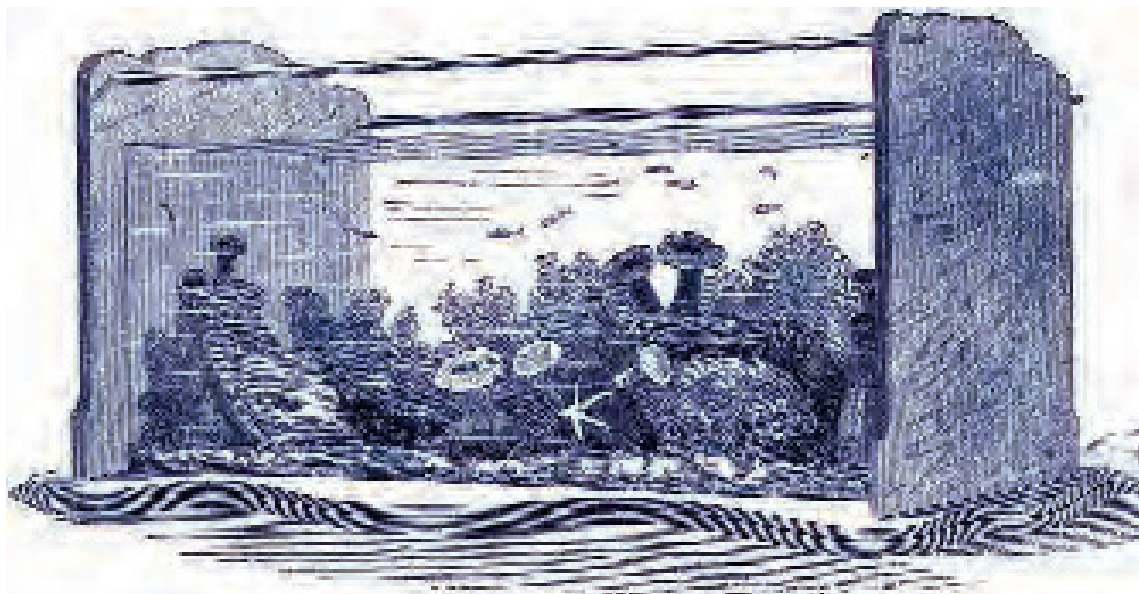
No meetings July & August

SEP 8 Joshua Wiegert - Brackish Water Species ~ 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 brand new 55-gallon tank & stand.

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

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



*Part 4*

THE RESPONSIBLE AQUARIST

THE LIONFISH

Pterois volitans

SALTWATER IS NOT IMMUNE TO INVASION BY NON-NATIVE ORNAMENTAL FISH AND PLANTS.

Lionfish in the Atlantic Ocean are currently a major problem, but certainly not the only one.

California has banned all *Caleurpa* species, for example. But for the purposes of this article, I will focus on lionfish.

As of August 1st 2014, the import and sale of all *Pterois* lionfish species in Florida is banned. This is due to a massive explosion of *Pterois volitans* (and to a lesser extent *Pterois miles*) all along the western Atlantic and Caribbean.

These fish are Pacific natives, not Atlantic. Aggressive, venomous predatory fish they hunt in packs and gobble up everything their very large mouths can swallow.





They have few if any natural predators in the Atlantic. Hence their population is exploding! Recent research shows some minimal predation by groupers, but that is about it. Although the evidence is

the summer, they can be caught in warm gulf stream waters off of Long Island's Suffolk County and beyond. In 2014, one was caught off the coast of Rhode Island. As juveniles, these fish ride the warm gulf stream currents



not 100% indisputable research indicates that a relatively few individual lionfish released as a result of a probable hobbyist release are responsible for lionfish being in the Atlantic Ocean. Genetic markers of all the lionfish being tested are practically identical, thereby indicating the entire population came from the successful spawning of a few fish. The genetic diversity of all Atlantic lionfish is very low.

It has taken 30 years to get to the point where lionfish are now commonplace throughout the Atlantic and now causing extensive damage. The first lionfish was caught off the coast of Florida in 1985.

Since then, lionfish have expanded their range greatly. In

northward in summer, as do many other marine fish.

From North Carolina to Texas, year round sightings and collection is common. It's the same throughout all the Caribbean islands and Belize. Lionfish are caught now in Eastern Mexico, Panama, Columbia and Venezuela too!


It has been speculated that lionfish cannot cross the larger freshwater plume of the Orinoco River to reach Brazil, nor cross Gatun Lake in the Panama Canal to reach the Western Pacific, but the latest research shows this may not be the case.

Under controlled conditions lionfish have survived, ate and acted normally at a salinity of 6 PPT. Normal seawater is 25 PPT.

If they can do this in nature, it would not only allow them to cross the Orinoco plume to reach Brazil but also cross the Amazon plume to reach the South Atlantic. If they can tolerate slightly lower salinity, they could easily cross Gatun lake in the Panama Canal and work their way back up towards California. In addition, many brackish water environments have a salinity of 6 PPT, for example, Lake Pontchartrain in Louisiana. The expansion of lionfish into the Atlantic is far from over. So what can we do as hobbyists now that the lionfish is here, to stop its spread?

1. Buy "Atlantic" collected lionfish at your pet shop. Many large wholesalers now offer them at competitive prices.

2. Pick up a fork! Some commercial lionfish fisheries now offers lionfish thru various grocery stores. Lionfish is delicious! Not nearly as fishy tasting as Tilapia. Lionfish are not commercially fish farmed so every "Atlantic" lionfish you buy, whether at the pet shop or the grocery to grill in your backyard, is one less lionfish eating up a reef. There are lionfish recipes available on line and in cook books.

3. Never release any lionfish (or any marine fish or plant) into U.S. waters! 
Be a responsible aquarist!
Happy Fishkeeping!

7on4



SPECIES PROFILE



Scientific Name: *Pterois* spp.

Common Name: Lionfish, zebrafish, firefish, turkeyfish.

Distribution: Native to the Indo-Pacific.

pH Range: 8.1 - 8.4.

Temperature Range: 72° - 78°F.

Water Hardness: 8° to 12° dGH.

Life Span: up to 15 years.

Size: 2' - 18" inches.

Temperament: Very aggressive. Two of the 12 species of *Pterois*, the red lionfish (*P. volitans*) and the common lionfish (*P. miles*), have established themselves as significant invasive species off the East Coast of the U. S. and in the Caribbean. About 93% of the invasive population in the Western Atlantic is *P. volitans*. They have been described as "one of the most aggressively invasive species on the planet."

Sexing: Not known.

Diet: Anything that will fit in their mouths.

Tankmates: Should be kept in a species tank.

Breeding: Not bred in aquaria. *Pterois* species have complex courtship and mating behaviors. Females release two mucus-filled egg clusters frequently, which can contain as many as 15,000 eggs. Studies on *Pterois* reproductive habits have increased significantly in the past decade.

Remarks: There are currently 12 recognized species in this genus.

Reference:

- wikipedia.org/wiki/Pterois





From www.lionfishhunters.org/Recipes.html

LionFish Recipes

FRIED BAHAMIAN STYLE

Lionfish meat
Oil
Flour

Cornstarch
Lime wedges
Favorite dip

Preparation:

Prepare the fish by lightly washing/lightly scoring and patting dry. Prepare Bahamian style marinade of lime juice, sour orange juice, garlic, goat pepper, salt and pepper. Prepare the fish by lightly washing and patting dry.

Cooking:

Heat oil. Coat fish in flour and cornstarch mix. Fry fish until lightly golden. Serve with your favorite dip and lime wedges.

TEMPURA LIONFISH

Lionfish meat
Salt
Rice vinegar
Favorite tempura batter

Ginger
Garlic
Mirin

Preparation:

Prepare the fish by lightly washing and patting dry. Prepare the marinade which includes a mixture of fresh ginger, garlic, mirin, salt and rice vinegar. Marinate as per your time allowance but up to 1 day. Make tempura batter (as per your favorite recipe)

Cooking:

Heat oil. Dredge filet in flour and dip in batter. Fry until lightly golden. Serve with your favorite oriental sauce.

LIONFISH TACO

Lionfish meat
Soft or Hard Taco Shells
Olive Oil
Blackened Seasoning
Shredded Lettuce

Spicy Pico de Gallo
Black Beans
Shredded Cheese
Sour Cream

Preparation:

Use soft flour or crunchy corn tortillas. Spice Lionfish Filets with blackened seasoning.

Cooking:

Sear on a hot pan with olive oil. Place Lionfish in tortilla. Add shredded lettuce, home made spicy pico de gallo, warmed black beans, shredded cheese, top with sour cream.



Anthony P. Kroeger – BAS

RAISE THE FLAG

LIBERTY MOLLIES

Poecilia sphenops (var)



Liberty Molly! Red, White and Blue! **A patriotic fish indeed.**

This human selected mutation does not occur in nature, but is nonetheless a very interesting and gorgeous color mutation of the wild *Poecilia sphenops* from Mexico.

In the 1950's Liberty mollies were very popular and found everywhere. Not so anymore!

Liberty mollies are rare and hard to find now. Prices for any you are lucky enough to find are always expensive. The best places to find them are through speciality livebearers societies such as the ALA. Occasionally you can find them at online stores or online bid sites also.

Liberty mollies' claim to fame is the male's gorgeous dorsal fin and their size.

Base body color on both sexes is a pleasing light green with light blue reflective overtones. Their belly is snow white, eyes are black with a metallic silver iris. All fins are clear on both sexes except for the male's stunning dorsal. Glowing red, white and blue, this fish is a stunner when it displays, which in this molly's instance is constantly. Liberty mollies have high rounded dorsal fins, not a sailfin. Displaying males are drop dead gorgeous.

Liberty mollies grow huge! 5" inches females are the norm. Males easily reach 3" to 4"+. A big molly! As such, this fish needs room and lots of it! Not only do they grow larger, but they are extremely active too.

A 55-gallon aquarium minimum is needed for one male and four females. Forget about keeping a trio. The male will run two females until they die. Liberty mollies must be kept in harems. One male and as many females as you can find.

Liberty mollies are incredible jumpers! Always cover their aquarium completely. I once had one jump and clear two 55-gallon aquariums before landing in a third one 8' feet away!

Warm, hard, alkaline water with a temperature of 80°F, and a pH of 7.4+ is mandatory. This fish dies fast of bacterial diseases in soft or acidic water. It also catches ick readily at temperatures



under 75°F, so keep it warm.

Liberty mollies love huge volume partial water changes. I change 50% each week. 50% twice a week is even better.

I add only minimal salt to their water, 1 TSP to 5-gallons. A larger, active fish requires lots of oxygen and produces large amounts of waste, so a larger capacity power or canister filter is mandatory to give them the water quality they require. Try to use a filter that has a capacity to turn over at least 4 times your tank volume per hour. 6 times per hour is even better!

Liberty mollies love current. I use multiple powerheads in the 55-gallon tank to provide this.

Liberty mollies are not shy fish but still love lots of live plants to swim in and thru. They love sunlight, so I use Watersprite, Hornwort, Vallisneria and Duckweed with them. They nibble and will eat these plants too.

You can keep Liberty mollies in a community tank, but their very active nature can disturb slow moving fish. Good tank mates are giant Danios, *Danio malabaticus*. Due to their rarity, I usually keep them in their own species tank.

Liberty mollies are very heavy feeders. Feed high protein foods like bloodworms to them sparingly. Their main diet should consist of high quality vegetable or spirulina flake or pellets with fresh boiled or blanched zucchini, peas, kale, summer squash or green beans daily. They also love dandelion leaves, so all that yard/garden weeding serves dual purpose.

Liberty mollies breed in typical livebearer style with a few exceptions:

1. Never move a heavily pregnant female. She will usually abort if you do. Rather remove all the other fish and leave the female alone in her home tank. Remove the other fish at night when the room is dark so as to catch them more easily while they sleep and try not to disturb the

pregnant female. Use a flashlight covered with red cellophane so you can see...never turn on the tank light to do this.

2. If you absolutely must move the female do so as soon as you realize she is pregnant. Put her in at least a 20-gallon tank with water from her home tank, along with a sponge filter and heater.

You can keep Liberty mollies in a community tank, but their very active nature can disturb slow moving fish. Good tank mates are giant Danios, *Danio malabaticus*. Due to their rarity, I usually keep them in their own species tank.



Never put Liberty mollies in a plastic breeder or net trap. They die of shock in plastic breeders and will tear their mouths to shreds trying to get out of a net trap. Such mouth injuries are usually fatal!


3. After birth, remove the female to a second 20-gallon tank for at least 2 weeks so she can rest and feed. If you put her back with the male without 2 weeks rest, he will hound her until she dies of exhaustion.

4. For the tank where the female gives birth, fill it with Hornwort, Watersprite, and Duckweed. Some (not all) females are voracious predators. These

plants are helpful in allowing the fry to elude their mother. Use weighted Hornwort or non-toxic yarn to cover the bottom of the aquarium too, and of course cover the tank. Turn all lights on gradually so as not to frighten the female.

Fry are large, usually $\frac{3}{8}$ " to $\frac{1}{2}$ " inch and well developed. They take crushed flake food and cooked veggies immediately,

Liberty mollies grow slowly. It is not unusual for it to take a year or more for the male to develop his spectacular colors.

Care of fry is the same as for adults. Try Liberty mollies, if you can find them. Show your patriotism! I know you'll be glad you did! 

Happy fishkeeping.

Jon4



***Pseudotropheus* sp. Msobo**

A Breeder Report

***Pseudotropheus* sp. Msobo is a maternal mouthbrooder native to the rocky coastline of Lake Malawi, along the Tanzanian coast between Cape Kaiser and Lundu.**

It resides in waters up to 100 feet deep.

The climate is sub-tropical with temperatures in the 80's; the native waters for this fish is very hard.

I obtained 13, 1 inch long fish from a GCCA member from our classified ads. Males achieve a size of 4½ inches and are electric powder blue with dark blue random blotches; the male color pattern varies in every male. Females achieve a size of 4 inches and are deep solid yellow / orange.

I researched this fish using the internet. There appears to be some inconsistent info about this fish. Is it a "*Pseudotropheus*" or "*Metriaclicma*"? I chose *Pseudotropheus* because of its smaller size of under 5 inches.



There also seem to be three variants: *Pseudotropheus* sp. Msobo "Magunga,"

Pseudotropheus sp Msobo "Membe Deep," and *Pseudotropheus* sp. Msobo "Lundo Island". The fish that I have are the *Pseud.* sp. Msobo Magunga. The fish bred in a 40-gallon breeder tank which contained a mix of crushed shells and gravel and larger rock work and broken flower pots. The tank was filtered by (2) old fashioned box filter's and an AC50 and had a pH of 7.4. I performed weekly water changes equaling 20% of the tank volume. I used fluorescent lighting for duration of 5 to 6 hours each day. I fed the fish NLS, Veggie flakes and occasionally



frozen Brine Shrimp.

When spawning, the blue colors of the male intensifies. Females' color remains relatively the same. The male cleared the gravel from under and around some broken flower pots. He then courted her by shuddering his body and swimming back and forth to the spawning area. Next, the female laid an egg and picked it up in her mouth. The pair assumed a "T" position and the female then bit at the egg spot of the male fertilizing the eggs.

They repeated this until she had laid her last egg. The pair laid approximately 20 eggs. After spawning, the female retreated to a hiding place to avoid harassment by the male. I left the female in the same tank, it has plenty of hiding spaces and rock work, and I stripped her about 15 days later. They had very little of the egg sack left and were able to swim freely. The fry were yellow in color and just over $\frac{1}{4}$ of an inch long and looked very similar to the female.

The fry didn't require any special care on my part. I put them into a net breeder for about two weeks before moving them into 10 gallon tank. The

When spawning, the blue colors of the male intensifies. Females' color remains relatively the same. The male cleared the gravel from under and around some broken flower pots.




tank used a sponge filter for filtration. I started the fry off on baby brine shrimp, Cyclop-Eeze and crushed veggie flake. After the first week, I started feeding them a combination of crushed veggie and baby brine flakes. The fry grew fairly quickly.

I started with 13 fish; as males matured, I removed them and selected the best looking male. I ended up with 1 male and seven females. This ratio kept the male in spectacular

color at all times. Sometimes the females can be hard on other holding females. They will circle each other as if they were pairing off and try to get the holding female to spit her brood. This aggression seemed to recede as they got older, and seldom occurs now. This was relative easy to get mbuna to breed. Both males and females provide a lot of color to the tank. I would recommend them to other aquarist that keep Africans.

They are a beautiful and mildly aggressive fish. This is a very attractive mbuna species, with the male color pattern of electric blue with dark blue random blotches to the very deep solid yellow/orange female. It is a relatively easy mbuna to spawn, if you provide plenty of rock work and hiding places. As with most mbuna, you want at least a 3 to 1 ratio of females to males, dependent on your tank size.

Pseudotropheus sp. Msobo has been in the hobby for over ten years now. It is sometimes found at your local fish shop; however your best bet will be through your local club members. Expect to pay in the 9 to 12 dollar range each at a retail shop for 1 to 2 inch juvi's. 





Part 5

Terrific Tetras

Black Neon Tetras

Hyphessobrycon herbertaxelrodi



I close this series with one of my favorite tetras: the black neon. Those fish have a subtle beauty. That description fits the black neon perfectly.

Native to Brazil, this tetra grows to about 1 1/2" inches or so.

Black neons are commonly bred in both Florida and the Far East, and are available everywhere at cheap prices. I personally find black neons to be one of the hardiest tetras. I have had many specimens live for years. They rarely catch diseases, and are much more tolerant of dye medications than most tetras are.

Black neons have a quiet beauty about them. A chocolate brown nape, neon gold stripe shoulder to tail overlays a broad black stripe directly below it. The belly is brownish to white, the eye is black with a gold iris, the top half of the eye is fire engine red. The fins are clear, not flashy, just beautiful!

Very peaceful, black neons look great in

any community tank. They make a marvelous combination with neon tetras, *Hyphessobrycon innesi*, with which they will readily school. I

once had a 125-gallon aquarium full of both black neons and neon tetras. It was incredible!

A typical tetra, keep this fish in a school at least 3 to 6 is better, and more is even better yet.

A 20-gallon long with a cover will easily house 6 black neons. Black neons tolerate and do well in most tap water, even hard, alkaline water. Fairly active in a school, this tetra will occasionally "flutter" in one spot, sometimes letting its tail drop a bit. This is normal behavior for a black neon, so don't be surprised to see it in your aquarium at home.

Black neons do like a bit of current. A small power filter is fine, but a sponge or box filter works too. Black neons look best over a black or dark substrate. A black background with green plants really brings out their color.

Although they need room to swim, plants (live or artificial) are essential for their comfort too.

I find black neons look really good with Amazon swords, sagittaria species and water sprite. Be sure to let some of the water sprite float.

Black neons do fine under most lighting and are not especially "light shock" sensitive.



Feeding is easy! Black neons are gluttons and love to eat.

But be sure to feed them a varied diet, including bloodworms and tubifex. These foods seem to bring out their colors.

Black neons are tough; they can tolerate water conditions that certainly would kill other tetras. But don't treat them that way. I change 30% of their water once or twice a week and they do just fine. Keep their temperature between 74° and 80°F.

When you do a water change be sure the water you add is a degree or two warmer than the water you take out. That way your black neons will not be chilled and put at risk for developing ick.


Black neons are not especially difficult to spawn. Use a 5-gallon tank, hornwort, java moss and an airstone. Fill the tank half full. Cover all sides except the front with black paper. Do not use a trio; use a pair. Black neons can be egg eaters and an extra male can easily eat the spawning

pairs' eggs.

Condition the breeders well, especially on worms. Black neons should be placed in the breeding tank at night when it is dark. They will usually spawn side by side in typical tetra fashion the next morning. Spawns can be large, 200 to 300 eggs. The fry are easy to feed, but are somewhat light sensitive, so remove their tank "curtains" slowly and gradually.

Baby brine shrimp, crushed flakes, microworms, etc., are good initial fry foods. The fry grow fast!

One final thing: Black neons make great dither fish! Their gentle consistent, quiet motions work wonders on helping rams, apistos, all dwarf cichlids and even discus to overcome their shyness and feel at ease. Black neons are especially good in this regard with rams and apistos.

Not the flashiest tetra, but certainly one of the best. Hardy, peaceful, pretty, cheap black neons have it all! 

70n4

John Todaro - BAS

SPECIES PROFILE

Scientific Name: *Hyphessobrycon herbertaxelrodi*.

Common Name: Black Neon Tetra.

Distribution: Upper Rio Paraguai in the states of Mato Grosso and Mato Grosso do Sul, Brazil.

pH Range: 5.0 - 7.5.

Temperature Range: 69° - 82°F.

Water Hardness: 18 - 215 ppm.

Size: 1 ½ inches.

Temperament: Very peaceful, making it an ideal resident of the well-researched community aquarium.

Sexing: Sexually mature females are noticeably deeper-bodied and a little larger than males.

Diet: Omnivorous: small invertebrates, crustacea, filamentous algae, fallen fruit in nature. In aquaria feed a diet of dried foods, but does best when with a varied menu

which contain live and frozen bloodworm, mosquito larvae, Daphnia, Moina, etc.

Breeding: An egg-scattering free spawner exhibiting no parental care. When the adult fish are well-conditioned, a single pair or group comprising one or two males and several females can then be introduced to each container and left in place until eggs are detected (typically the following morning).

Notes: This species has been a ubiquitous aquarium fish since its discovery, and is produced on a commercial basis in several countries, therefore wild fish are no longer collected.

Reference:

Seriously fish.com



John Todaro – BAS

From the Brooklyn Aquarium Society's publication

SCRUMPTIOUS MEALS & LIVE FOOD TREATS Compiled, Edited & Written by John Todaro



The best aquarists know that nothing conditions fish for reproduction better than live food. The one problem with live aquatic food is you run the risk of introducing pathogens (parasites, diseases, etc into the aquarium and making your fish sick. Mosquito larvae are not worms, but an aquatic midge, and since they live in temporary pools or in fish-free water, the risk of introducing harmful pathogens is extremely low.

Collecting "wild" mosquito larvae can be a hit or miss proposition for safely reasons. Most states across the country have some type of mosquito control department, and if your collecting pond has a good amount of larvae, eventually it will be found and poisoned in the name of people not getting bitten by mosquitoes. The safest and relatively easiest way is to culture your own.

To start with, any outside shaded area with no direct sunlight will do. Under some trees or behind a shed will be fine. The reason to place your containers in the shade is that in direct sunlight, the water will heat up and the larvae will mature too quickly. Also the adult mosquitoes are less likely to lay their egg rafts in full sunlight for fear of the water evaporating before the larvae have time to mature.

The containers used can be any containers that are safe for fishes. Plastic is best, but don't use any metal containers (metal containers could poison the larvae and kill them or poison your fish). The size is important but not for the reason most people think. Through trial and error, we learned that small containers with a greater surface area will produce more larvae than larger containers. As an example, three 1 to 2-gallon buckets will produce as much or more than five 5-gallon buckets. The smaller pails are also easier to handle and hide from annoying neighbors. The number of buckets you will need will depend on how much room you have and how much larvae you will need to feed your fish. You will need one bucket more than you think you want to use.

When larvae appear and grow to $\frac{1}{4}$ to $\frac{1}{2}$ inch in length, it is time to start collecting them for food. If you wait until they are any bigger, they will start to change into adults, and you don't need more mosquitoes flying around biting people.

In warmer weather, don't let the culture go longer than a week between collections as the larvae will pupate into adults. When correctly collected, you can do more for reducing the adult mosquito population than spraying and do no harm to the environment.

Larvae that is collected but not fed off can be easily frozen for future use. 

Dean Majorino

Reprinted from the *Shoreline, Free Fish Food Or Culturing Mosquito Larvae For Fish Food*, Dean Majorino, February 2004, Jersey Shore AS.



RECIPE

INGREDIENTS YOU WILL NEED:

4 tbsp of dry milk.
2 tbsp of spirulina powder.
1 tsp of bakers yeast.
1 tsp of extra fine sugar.

EQUIPMENT:

Plastic buckets.
Pieces of Styrofoam.
Rain water or dechlorinated, or bottled water. Do not use pond water it will have the odor of fish and will discourage the mosquitoes from laying rafts.

OPTIONAL:

1 tsp of any dry larval rearing diet
APR, Golden pearls or ultra fine powdered fish food, etc.

CULTURING:

Mix all the ingredients together and store it dry in a small jar.
To the water add a tiny (a small pea sized) amount of the dry food mix, just enough to lightly cloud the water. Too little is better than too much. Then place a small piece of non-toxic matter that will float on the surface of the water and will not sink. This gives the mosquitoes a place to land and a place for them to walk out onto the water to lay their eggs.
Place container outside. Check the containers every few days for mosquito larvae. It could take a couple of days or up to two weeks before you see mosquito egg rafts. They look like a small piece of charcoal floating on the water and

about the size of a typed "o."

If there is no larvae after a short time, one of a few things could have happened.

1. You live in an area where there are no mosquitoes (not likely as mosquitoes live in every continent except Antarctica).
2. If the container smells bad, you have added too much powdered food. Dump 3/4 of the water out and fill with new water.
3. The mosquito commission got to your bucket and killed your larvae. At certain times of the year, and wet seasons very early in the morning, planes will spray for mosquitoes (watch the news as they will announce when spraying will commence).
4. The temperature outside is still too cold (a temperature of 50° to 55° F or higher is when they start to become active).


HARVESTING:

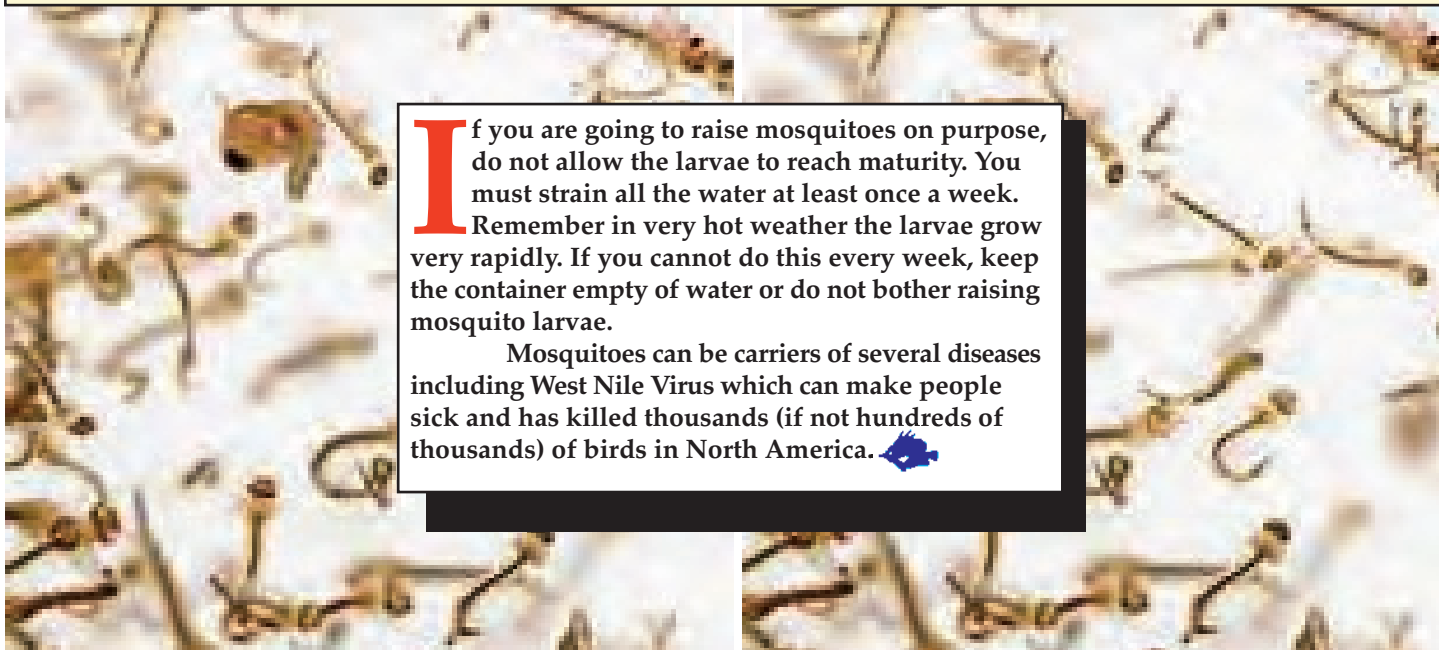
Place a fine aquarium net (a white net; not a coarse green net) over an empty bucket and pour the entire contents of the larvae bucket into the empty bucket.

Using the straining method vs a netting method is preferred as you will always miss one or two larvae, and they will turn into adults. Remove the floating object and place it into the now full bucket (without larvae).

Continue with all buckets until all are strained through the net and all the buckets are empty of larvae. The water can be reused until it is clear; at that point, just add more powdered food. Or if no larvae appear in the buckets, wash the buckets and start over again.

If you are going to raise mosquitoes on purpose, do not allow the larvae to reach maturity. You must strain all the water at least once a week. Remember in very hot weather the larvae grow very rapidly. If you cannot do this every week, keep the container empty of water or do not bother raising mosquito larvae.

Mosquitoes can be carriers of several diseases including West Nile Virus which can make people sick and has killed thousands (if not hundreds of thousands) of birds in North America. 





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, Bloomington, 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.



Scientific Name: *Palaemonetes paludosus*
Common Name: Ghost Shrimp, Glass Shrimp
Origin: North America.
Found in the wild: Yes.
pH Range: 7.0 - 7.8.
Ideal pH: 7.2.
Temperature Range: 70° - 78°F.

Ideal Temperature: 75°F.
Hardness Range: 3 - 15 dkh.
Ideal Hardness: 8 dkh.
Life Span: 1 - 2 Years.
Size: 1/2" inch.
Gestation Period: 30 Days.
Diet: Omnivore.

AMERICAN GLASS SHRIMP HISTORY

The American Glass Shrimp has been in the aquarium hobby in The United States for as long as the hobby has been around. The American Glass Shrimp is often found being sold as a feeder shrimp, to be fed to larger fish.

AMERICAN GLASS SHRIMP CARE

Most Ghost Shrimp that are found in America are sold as feeder shrimp and will not have a long life span in the home aquarium due to the conditions they are shipped to the store in and kept in the store. If the shrimp do survive, or if a captive raised stock is available, caring for the American Glass Shrimp is fairly easy. A well established aquarium will support a fairly large population of this aquarium shrimp.


AMERICAN GLASS SHRIMP DIET

Glass Shrimp are very enthusiastic eaters, and will accept any food intended for aquarium fish or invertebrates including flake foods and sinking pellets. The American Glass Shrimp has often been observed swimming upside down at the surface of the aquarium to feed on flake foods.

AMERICAN GLASS SHRIMP BREEDING

Breeding American Glass Shrimp can be a little bit difficult in the home aquarium. American Glass Shrimp are difficult to determine sex and they are a low order shrimp (their eggs hatch as free floating larva, not miniature versions of their parents) so they are a little more difficult to raise. Once hatched, the small larva will require powdered algae (Spirulina is a great algae for this) and should be in a separate aquarium to avoid predation. The larva will metamorphosis to miniature versions of the adults in about a week. Once the larva have reached metamorphosis, they will require no further special care.

AMERICAN GLASS SHRIMP BEHAVIOR

The American Glass Shrimp is generally non-aggressive, but there have been reports of a few individuals that can get a bit aggressive. They can sometimes eat baby shrimp of any species or even fish fry. They are always an active shrimp when there are no predators in the aquarium. 

Ryan



The Practical Plant

PROPAGATING *Cryptocoryne griffithii*

I recently acquired a specimen of this plant at a club auction. I'm always game for trying out a new plant that I haven't kept before. *C. griffithii* is native to the Malay Peninsula. The leaf shape is wide ovate with a caudate base. The leaves are a bright green with a dark stem. It is fairly low growing which makes it suitable for use in the foreground.

I planted this new acquisition in my Guppy tank. This set up is a 25 gallon tank where I keep all the males.

The pH is about 6.8 to 7.0; temperature is kept at 78°F and the GH runs about 60. This aquarium has 130 watt Compact Fluorescent lighting (Coralife "Aqualight" double strip) and CO₂ enrichment. A Fluval canister filter (model #204) with the output being directed through a submerged spray bar is doing my filtration. I use the Estimated Index system of fertilizer dosing. This means that once a week I perform a large water change (50-75%). This is usually done on Saturday. Don't worry about the large volume of water being replaced; your fish will love it. This large water change is necessary to

reset the system. Then on Saturday, Monday and Wednesday I dose the macronutrients; on Sunday, Tuesday and Thursday, I dose the micronutrients. Friday I take the day off. The lighting is timer controlled and is on for 12 hours a day.



It is, in typical Crypt fashion, slow to get established. Once it gets going, it grows well. It will spread via runners and, given a little time, become quite prolific. To propagate it, all you need to do is separate a plantlet from the runner and transplant it. One of the nice things about

this plant is that it does not seem to suffer from "Crypt Rot." Crypt rot is a condition where all the leaves rapidly disintegrate. There is considerable debate in plant circles as to the cause of this. I personally believe that this is just how the plant adapts to a new environment. I keep a variety of Crypts and the ones that displayed this phenomenon were not killed by it and eventually re-grew, however, some species took a very long time to do so. 🐟

Izzy



NEW & RARE FISH TO LOOK FOR.

AS AN IMPORTER I'M LUCKY
I GET TO SEE NEW AND RARE FISH ON A REGULAR BASIS.
FROM TIME TO TIME I WILL HIGHLIGHT SOME OF THEM YOU SHOULD LOOK FOR.



Tanganyika Tilapia - *Oreochromis tanganicae*.

Size: **Up to 16"**.

Location: **Lake Tanganyika.**

Diet: **Eats anything, requires veggie food.**

Temperament: **Peaceful with anything it cannot swallow.**

Will eat small fish.

Picture a Tilapia/pearl *geophagus*, *Geophagus braziensis* hybrid and you have the Tanganyika tilapia. Typical tilapia shape, red caudal and red edge dorsal. Beautiful neon blue and green metallic ripples across the body. Neon blue/green dorsal, neon green anal; the eye has an orange iris.

This gorgeous Tilapia is big, bold and stunning! Great with *Frontosas* and *Tropheus*! Just now beginning to be offered. If you like your Tanganyikans big, this fish is hard to beat! Not cheap! But for something new, it's worth every penny of the price!



Bleeding Blue Tetra - *Hyphessobrycon* "Bleeding Blue".

Size: **Up to 2"**.

Location: **Peru/Ecuador.**

Water Quality & Temperature: **Soft, acidic, 6.0 - 7.0 pH, 12° hardness, 74° - 80°F.**

Food: **Eats all foods offered.**

Temperament: **Community tank.**

Wow! No wonder this new Tetra is all the rage! Undescribed but closely related to *H. nigricinctus*, this fish is gorgeous! Broad deep metallic blue lower flanks, an orange changing to metallic pink lateral line stripe. Honey nape with metallic blue overlay. Orange upper iris, neon green lower eye, gillcover & jaw. Fire red caudal & adipose fins. Thin white belly. This fish is shaped like a black neon, stunning! Only sporadically imported. Get'em' while you can! Pricey but beautiful!



Strawberry Rasbora - *Boraras naevus*

Size: **Up to 0.7"**.

Location: **Thailand.**

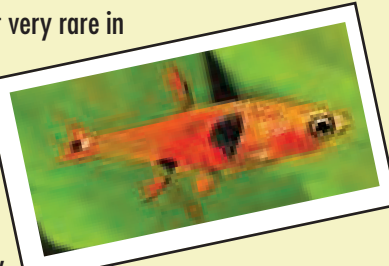
Water Quality & Temperature: **Very soft, acidic, 10° GDH, 5.5 - 6.8 pH, 72 - 80°F.**

Food: **Smallest frozen & flake foods.**

Temperament: **Peaceful, great in nano tanks.**

A rare Rasbora whose color packs a punch! A glowing strawberry red body. Red tipped fins, black 1st dorsal and anal fin rays. Larger black blotch mid-flank. Black spot in the caudal peduncle, yellow head. Gorgeous! One of the most suitable nano tank fish. Not rare in nature, but very rare in stores. Most exporters never offer them due to their extremely small size.

Lately I've had 3 exporters offer them. Price is very reasonable. This tiny Rasbora will not show its gorgeous colors in a shop setting, usually. But if you find some buy them! You'll be amazed.





Mike Hellweg - MAS
Missouri Aquarium Society, Inc.,
The Darter November/December 2016 Volume 42, Number 6
Photos: Tropical Fish Keeping, Segrest Farms & Editor

The Black Tetra

Gymnocorymbus ternetzi



Coming to our hobby from the Rio Guapore in Bolivia is the stunning Characin we know as the Black Tetra.

In England, it is known as the Black Widow, but it lacks the red hourglass of its Arachnid namesake. It is usually listed among the top five in popularity among the Tetra clan [it is still in the top ten], especially when it comes to easiness in preparing and inducing them to spawn. In fact, it is probably The Tetra to introduce the novice breeder to the nuances of raising Tetras.

Since the late 1980s, the Black Tetra has become available in an amazing myriad of "colors." Sometime in the mid-1980s an amelanistic (lacking black pigment) strain became available - the WHITE Black Tetra. Someone then came up with the "brilliant" idea that this white background would make a great canvas upon which he could work his magic with dye. Thus were born the

"Blueberry," "Grape," "Strawberry," etc. Tetras that can be found in many shops which also sell the "wonderful" Painted Glassfish. [Fortunately, these horrendous practices have largely been ended.] I personally find this practice hideous, but there is no accounting for taste. Some people even liked **Bill Bidwell**! [insert **Stan Kroenke** here]. If these "colors" weren't selling well, breeders wouldn't be going through the extra cost of dying them, and retailers wouldn't be stocking them.

Obviously, these man-made colors cannot be transferred from one generation to the next. I have been in a shop where I have overheard people ask the clerk if they spawned a red and a blue, would the offspring be purple?!!! Worse yet, the clerk answered that she thought they would be BLUE since blue was dominant! After all, weren't more than half of the fish in the tank blue?!!! I'm not kidding! After the couple left, I mentioned to



the clerk that the fish were dyed, not naturally that color, and she thought I was lying! Needless to say, I haven't returned to that store. [It actually closed about a year later - no loss there!]

To my mind (admittedly the mind of a twisted Tetra Fan), few sights are more stunning than a shoal of young Black Tetras gliding gracefully throughout the tank. Even a shoal of White Black Tetras in a darkly planted tank with a dark bottom is strangely mysterious. They look like ghosts flitting about among the vegetation. Try that for a Halloween themed tank.

Earlier I mentioned "young Black Tetras." Young Black Tetras have much more color than older Tetras. As they reach puberty, their colors begin to fade to the pleasant silvery gray that marks a mature *G. ternetzi*. Obviously, the white colored specimens don't lose their white coloration, since it is already the absence of black that makes them white! As for the dyed specimens, by the time they reach maturity, most of their hideous cosmetics have faded away. A large female may reach two and a quarter inches without her tail, and may be nearly that tall from the top of the dorsal fin to the bottom of the anal fin! There are also long finned variants which may add another inch and a half to the total length. [Today there are also genetically modified *G. ternetzi* called Glofish® to which a coelenterate gene has been added to cause the fish to glow in different colors. These will breed true, but as they are patented, it is not lawful to intentionally breed them or distribute their progeny.] Youthful coloration is metallic silver that blends into a velvety black. The silvery front half is marked by



Black Tetra: Normal



White/Ghost



Fruit/Dyed Colors



Glofish®



Glofish®



Longfin Black Skirt

three black bands. The first goes through the eye, the second just behind the operculum, and the third midway along the side. The large anal fin is black, as is the dorsal. The paired fins, the caudal, and the adipose are all clear in most specimens.

The male is more slender, and its colors are more intense, even into adulthood. The female is obvious from her hugely distended belly when she is full of eggs.

Black Tetras make good community tank residents, where they will shoal peacefully among themselves and along with other similarly shaped fish. They do best, as do most Characins, in a shoal of 6 or more individuals. Kept singly, they can be a bit scrappy with slower fish such as angels and Bettas. They are undemanding as to water conditions and will eat anything you feed them. They deserve a little live food from time to time, but will also

thrive on flake, even being willing to spawn on a diet of nothing but flakes! Not many of their Tetra cousins will oblige that willingly, but they can serve to whet your appetite!

They are very easy to induce to spawn, even to the point of spawning in the community tank.

Of course, no fry would survive in such an environment. The best way to include them to spawn is to separate the adults for a week or so. While you are doing

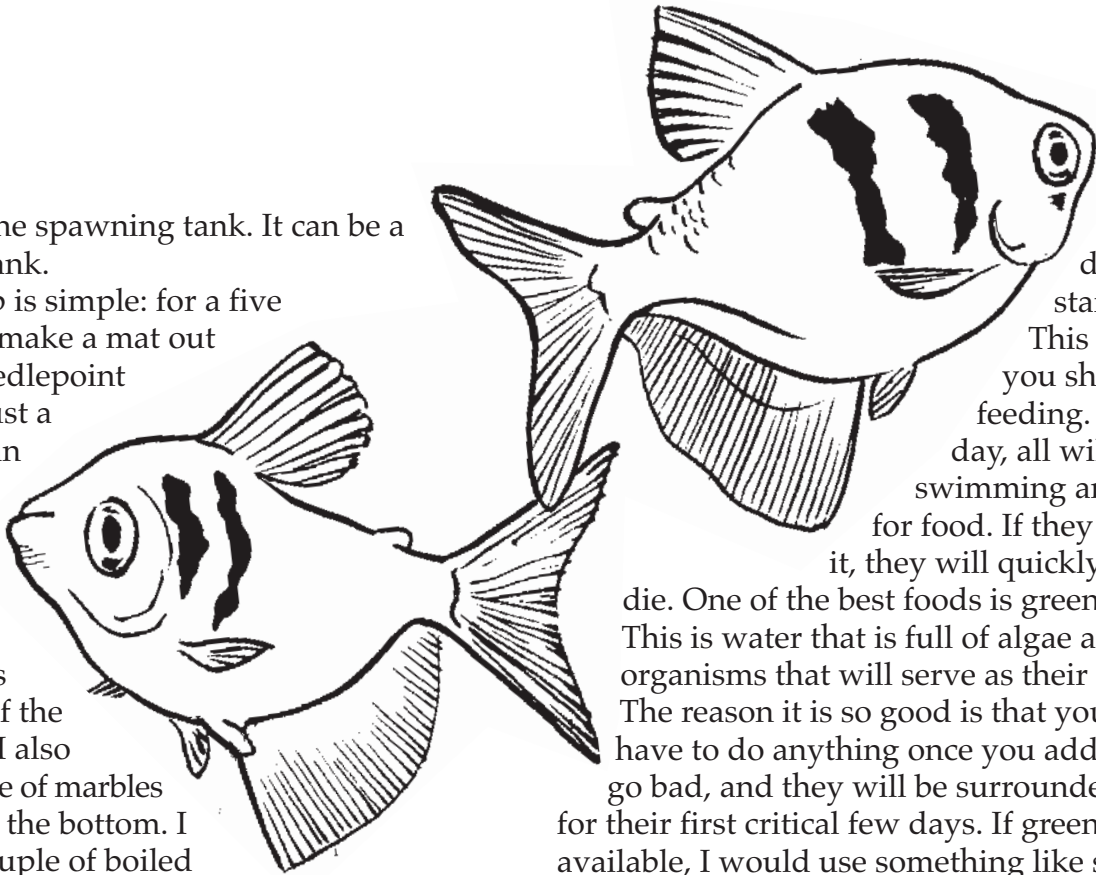
this, set up the spawning tank. It can be a five gallon tank.

Set up is simple: for a five gallon tank, make a mat out of plastic needlepoint canvas cut just a bit larger than the bottom of the tank.

This will cause it to bow towards the middle of the tank, where I also place a couple of marbles to keep it off the bottom. I also use a couple of boiled nylon mops, one floating, and one or two on the mat. The water should be soft, but hard water will work as well. Black Tetras have been in the hobby for so long they have become domesticated and will do well in just about any water. I have even raised them in our well water at 350 ppm! If you want, you can also add Blackwater Tonic or something similar to help condition the water.

After feeding and fattening up the adults for a week or so, it is time to put them in the spawning tank. Add the female first, and then add the male right before lights out. They will usually spawn in the wee hours of the morning and be done long before noon of the next day. Remove the parents if they seem to be more intent on looking for food than in looking for one another. This means they are done spawning. They are now looking for food. The only food in the tank is their eggs.

The fry hatch in about 24 hours. For the first few days, they look like little slivers of glass hanging from the sides of the tank. On the third



or fourth day, they start to hop.

This is when you should start feeding. By the next day, all will be free swimming and looking for food. If they don't find it, they will quickly starve and

die. One of the best foods is green water.

This is water that is full of algae and micro organisms that will serve as their first food.

The reason it is so good is that you don't have to do anything once you add it. It won't go bad, and they will be surrounded by food for their first critical few days. If green water isn't available, I would use something like spirulina powder, APR or LiquiFry. [LiquiFry is no longer available, but foods like Golden Pearls, Sera Micron, etc. will all work] After 5 days, switch to baby brine and finely crushed flake food. You are now on your way!

At about 3 weeks, move them to a larger tank or at least to several small tanks so they won't be stunted. If the spawning tank is the only tank available, do lots of water changes to dilute the hormones which will stunt them.

Just a suggestion: a 55-gallon tank, well planted with a dark bottom and background, and a shoal of 100 or so half inch Black Tetras.

Wow! 



Mika Zajac – MCAS

Reprinted from *TropiQuarium* September 2016 Motor City Aquarium Society

The Practical Hobbyist

In my over fifty years engaging in the aquarium hobby I have learned many lessons the hard way. My general time is spread over many interests and I have learned how to become efficient.

Five-gallon tanks:

Over the years, I have learned that the five-gallon tank is the MVP tool in the fish room. It is easy to buy a new one with a lid at most pet shops or to find someone that receives them free from restaurants. These tanks' obvious use is for water changes. I also like to use five-gallons as emergency aquariums for fish that need to be moved immediately, without delay.

Buckets:

The night before an auction I will catch the fish I plan to take and place them in buckets to save time in the morning. After a long day at the auction itself, I will add aged water and a sponge filter to this to create a temporary tank. Five-gallon buckets are also a good place to hold plants before adding them to an established aquarium. I personally use a small filter on my water buckets so that I have aged, filtered water for my fry.

Brushes:

In my fish room I like to use various brushes to clean filters and aquarium equipment. Scrub brushes may be used for large areas, dish brushes are excellent for filters, and tooth or denture brushes work well to scrub corners and impellers. Basting brushes or small paint brushes do a good job of collecting microworms. Pipe cleaners can clean the ends of tubing and air connections of air-driven filters.

Tubing:

Most hobbyists use standard half-inch tubing to do water changes. I will use a smaller diameter tubing for smaller aquariums, and I also like to use much larger diameter tubing: a 1½ diameter hose will empty an aquarium very quickly, and a two-inch hose will quickly move sand or gravel out of your aquariums. I will use a large-diameter hose to remove groups of unwanted snails.

Bulb Baster:

Relatedly, the bulb baster is an essential tool in the fish room. It may be used to collect excess food from fry bowls or containers or to subtract and add water to them. It is also very useful when collecting small fry.



Containers and Bowls:

Containers and bowls are a godsend to the aquarium hobbyists. One example of this is that they are excellent both for growing live food cultures and making gel food. Glass or plastic containers both work equally well. I also use them substantially for hatching fry and growing out small fish in a pinch.

Colanders, strainers and coffee filters:

I like to use colanders and coffee filters to strain rainwater before I add it to my aquariums. Colanders may be floated in aquariums to hold fish. I use strainers to catch snails, gravel and plant detritus before they go down the drain, and to catch duckweed before it fills up my sink.

Plastic cups:


May be used to move water, remove duckweed and catch fry at the surface of your aquariums. If I will be away for a long period of time I measure food and stack them in small plastic cups. It is easy enough to label the aquariums with numbers as well as the cups for the fish helper. I would recommend only one feeding a day for those who use this technique, with the food provided being on the low side for a regular feeding.

Clay pots:

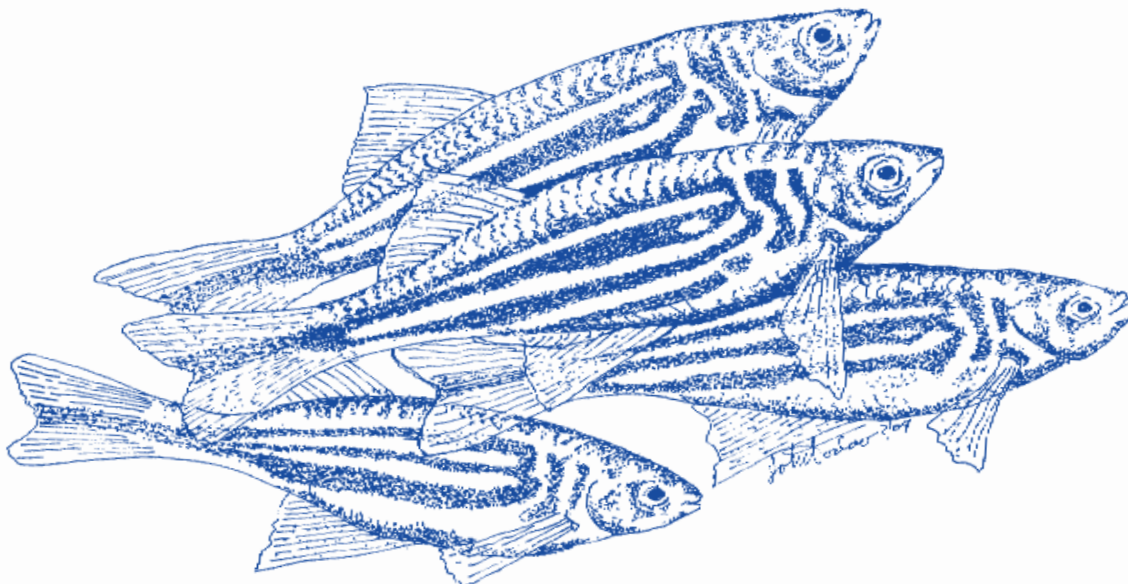
May be used for caves and structure in your aquariums. I like to plant in clay pots since I can easily move the plants when I want to work in the tanks and it is easier to catch the fish once you remove the pots. I like to grow plants in these pots so that I can give my plants a deeper substrate in which to grow.

Other:

Besides its use in making mops, yarn is an excellent choice to tie plants to driftwood. Green scrubber pads can be used to clean, and little round scrubbers work well to clean glass. Forks are the best way to hold zucchini. Funnels are handy to put liquids into containers. If you are using a canister filter and have a small leak in one of the seals, a little Vaseline will solve this problem.

Everyone has had the plastic parts of their sponge filters break, especially if they run a lot of them. Some of them can break after only a week of use! However, using rubber bands to repair them does not work, as the bands will quickly decay in water. I have found that if you instead use carefully wound electrical tape that the repair can last for years. 

Hopefully a few of these tips may help you out!





Anthony P. Kroeger – BAS

Smorgasboard in your backyard

**The local fresh food movement is huge
in farmers markets and grocery stores,
but what about local fresh fish foods?**

**Your backyard is full of it, and as local as you can get,
Plus it's live and fresh!**



You can usually buy live crickets, brine shrimp, blackworms and bloodworms at better aquarium stores, but what's in your backyard is free! How can you beat that?

So let's look at what's good for your fish in your yard! Here's a smorgasbord for you to select from.

Aphids

The scourge of every rose gardener and orchardist. Fish go absolutely insane over them. Simply snip off a plant stem containing them and either swish it or just let it float in your aquarium. Your fish will take care of the rest. Aphids will turn your neons and cardinals into piranhas, they feed so intensely on them. Hatchets and splash tetras will literally jump out of the water to get some. All tetras, rasboras, danios and barbs just glow in color when fed aphids. To find them, just look for curled leaves on the end of the stems of your plants.

Japanese beetles

They make zinnias and roses look like swiss cheese. they are about dime size and bright green, they hide in flower petals and leaf nodes.

Slow moving in the AM before they warm up, simply knock them into a container with a pencil. Medium and larger barbs and cichlids love these, Do not feed these to algae eating (mbuna) Rift lake cichlids. Fish eating Rift Lake cichlids (example: Lamprologus elongatus) love them. They will eat so many they look like they will burst.

Ants

You can easily find ants. To collect some, lay a mason jar, with a teaspoon of sugar, in it on its side in your yard. Within an hour or so it will be full of ants. All fish love ants! Hatchets, apistos, glowlites, and harlequins for example. If a fish can get it in its mouth they will eat ants.

Moths

Collect these at night. The best way is to put a white sheet on your bug zapper so half the light is encircled. Let the sheet drape into a collection container. The white sheet attracts moths which when they hit the zapper will roll down the sheet into your collection container. Every fish loves to eat moths. Even silver dollars go bananas over them;, of course they like sliced bananas too!



Mosquitos

Your moth setup will collect and get rid of these pesky critters too! Loaches, spiny eels, all betta species, chocolate gouramis, bala sharks and all killifish are especially partial to this freshly served delicacy.

Cockroaches

Eww!!! but great fish food! Especially for cichlids and larger tetras; such as red tail chalcens and exodons. Available everywhere, if you want to try them.

Earthworms

High in protein, earthworms are an incredible fish food. Just lay an old carpet on a patch of grass. Douse it with water and put some potato peelings under it and you will soon have a supply of worms. It's best to rinse collected worms in a fishnet prior to feeding. Fish slurp them up like spaghetti. Some people chop and mince them for small fish, but I just feed them to larger fish. Expect large cichlids and barbs to spawn within 7 to 10 days on initiation of daily heavy feeding of earthworms. This highly nutritious food is one of the best for your fish, Spiny eels love them too!

Common garden slugs

Look for these on or near your tomatos, melons, zucchini, pepper or under the carpet with your earthworms. These are like escargot to puffers, and medium and larger cichlids. Jack Dempseys gorge themselves on them.

Small flying insects - gnats, etc.

I lump this group together. Use your moth catcher for them, all fish love these flying insects.

Grasshoppers

Think of them as potato chips for your cichlids. Crunchy with a bit of spice. Available everywhere, kids love to catch them.

Mayflies

Manna from heaven for fish! Bright green night insects; you can collect them using your moth trap. In season they swarm near bridges and natural waterways/creeks. Use a fishnet to scoop thousands into a bucket. Great fish food for all medium and larger fish.

Cicadas

You'll know when these are out. You can't hear yourself over their song/calls. Collect off of tree trunks with a net. The darker the bark the more cicadas you'll collect. Especially good for cichlids, puffers, larger barbas and all larger fish.

Dandelions

I had to throw some salad in for the veggie crew. All vegetarian fish love all parts of this plant: roots, leaves, stems, and flowers. Silver dollars, plecos, scats, mollies, all mbuna, tropheus, pacu and other vegetarian fish will stuff themselves on dandelions. Always available, easy to find. Harvest, wash and feed fresh, whole or by the leaf

Needless to say wash any fresh food coming out of the ground before feeding it. Do not collect insects where pesticides have been used, and always cover your tank when feeding live food! No one wants these critters escaping into your home.

Your fish are sure to love this smorgasbord.

7on4



The striped barb

Barbus lineatus

There are those fish which are pretty due to their simplicity. The striped barb is one of those fish.

A larger barb; it grows to about 4 ½ inches and is native to Malaysia. Commercially raised by some Far East exporters, this barb is usually not too hard to find and is always reasonably priced.

Its coloration is simplicity itself. The body is sunshine yellow, multiple black stripes of slightly varying width run horizontally along its flanks. The edge fin ray in the dorsal and caudal fins is smokey black. Their belly is white and the eye black with silver iris. The rest of the fins are clear. A few silvery iridescent barbs are a very nice contrast fish to the gaudier species in your aquarium.

Lined barbs are a schooling fish in nature and should always be kept in groups of 4 to 6 fish or larger.

I have found lined barbs to be peaceful, community tank fish. I've never had them bother any other fish, but let me add a caution to this statement; since they are a larger barb species, I don't tempt them with very small snack fish such as neons. I keep this fish and all larger barbs with fish that are 50% of their size or larger.

This is a very active schooling fish and as such needs room. I suggest a 55-gallon tank for a small school. Plant only the sides and use tough

plants like crypts and anubius. I use a power filter and always cover their tank; they jump very well.

Any tap water will do as long as it's clean and well oxygenated. This fish is constantly on the go. They move so much, they use a lot of oxygen.

A trick to bring out their color is to use a dark substrate; never put this fish over light colored gravel it will pale out to nothing.



I house this fish in moderately hard, acidic to neutral water 6.6 - 7.0 pH, and a temperature of 72° to 76°F. This fish likes regular water changes. I change 30% weekly.

Striped barbs love food; they eat everything with gusto and stuff themselves. Flakes, pellets, frozen, you name it, they love it all. They also love to eat soft plants; spirulina and par-boiled zucchini are good foods for them and help save your plants.

They're commercially spawned for the aquarium trade and spawn in typical barb fashion.

They're very prolific and 500 - 1000 eggs will result from a spawning. Remove the adults as soon as they are through breeding. They're avid egg eaters. Fry hatch in 24 hours and are easy to raise on baby brine shrimp. Give the lined barb a try; you'll be glad you did.

Tony



Breeding *Corydoras panda*

I have always found *Corydoras panda* an attractive fish. They are from Peru and very adaptable for the home aquarium. The three others that are easy Corys to spawn

are: *C. aeneus*, the albino form of the same species and *C. paleatus*. They are a model community fish. Usually the way I know it has happened is that a baby (half sized) joins the herd. They usually place the eggs in a mop or clump of plants like Java moss. Occasionally, a few will be on the glass.


Back at the turn of the century, I was working as a teaching assistant. I set up a community tank in the classroom. The 29-gallon tank, a group of eight pandas, ten white clouds and seven tiger barbs. This was normal Chicago tap water. There was gravel and an undergravel filter with power head. The corys could decide if they wanted to play in the current. Also I use a power filter in an unheated tank. I did a fifty percent change of the water every Friday afternoon. I fed Tetra flake, Daphnia, and Blackworms. They seemed happy.

Pandas spawn almost daily in small numbers. I played the shell game with large clumps of Java Moss. Monday, Wednesday and Friday I would move them into a 10-gallon bare bottom tank with a sponge filter. I would move clumps of Java moss that had there longer back into the main tank. The eggs should hatch after four or five days. Monday and Friday I would siphon the



kittens into an empty two liter pop bottle to carry home to grow. I didn't have to feed the babies since they still had yolks in their bellies.

The fry are plain tan with a dark slanted line on the eye and a cap. Most Corys look different from their parents. There are some that look alike but the fry are different. They change to look like the parents around six to eight weeks. An exception is the albino which are like miniature adults. When they are tiny, you can see the little air bubble in their bellies.

The fry were fed baby brine shrimp several times a day for two weeks. You need put a small amount in so they don't get overfed. You can judge the young by the amount of orange in their bellies. You need to learn how much they need but gradually increase the amount as they grow. I keep them in a 10-gallon tank with three or less inches of water. They can't swim far when little. I changed them daily with water the temperature of an established tank. As they grow, I fed TetraMin tablets. I start with a quarter of a tablet and increase as needed. I like this for two reasons: one easy to control the amount and two, the flakes are a bit tiny sized food. It seems simple when you read this, but it took a long time to figure out. 



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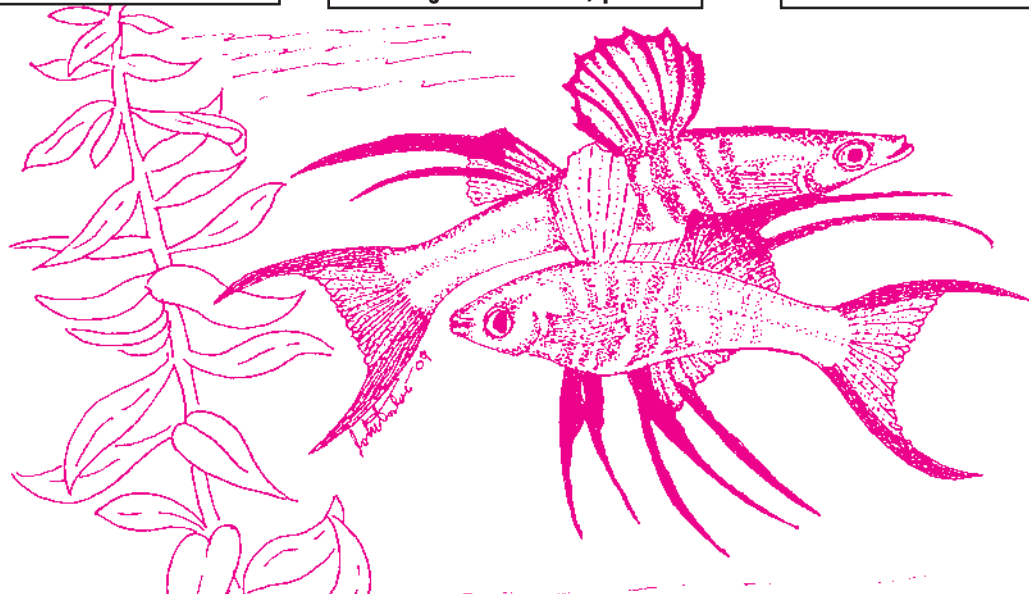
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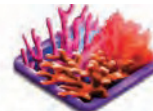
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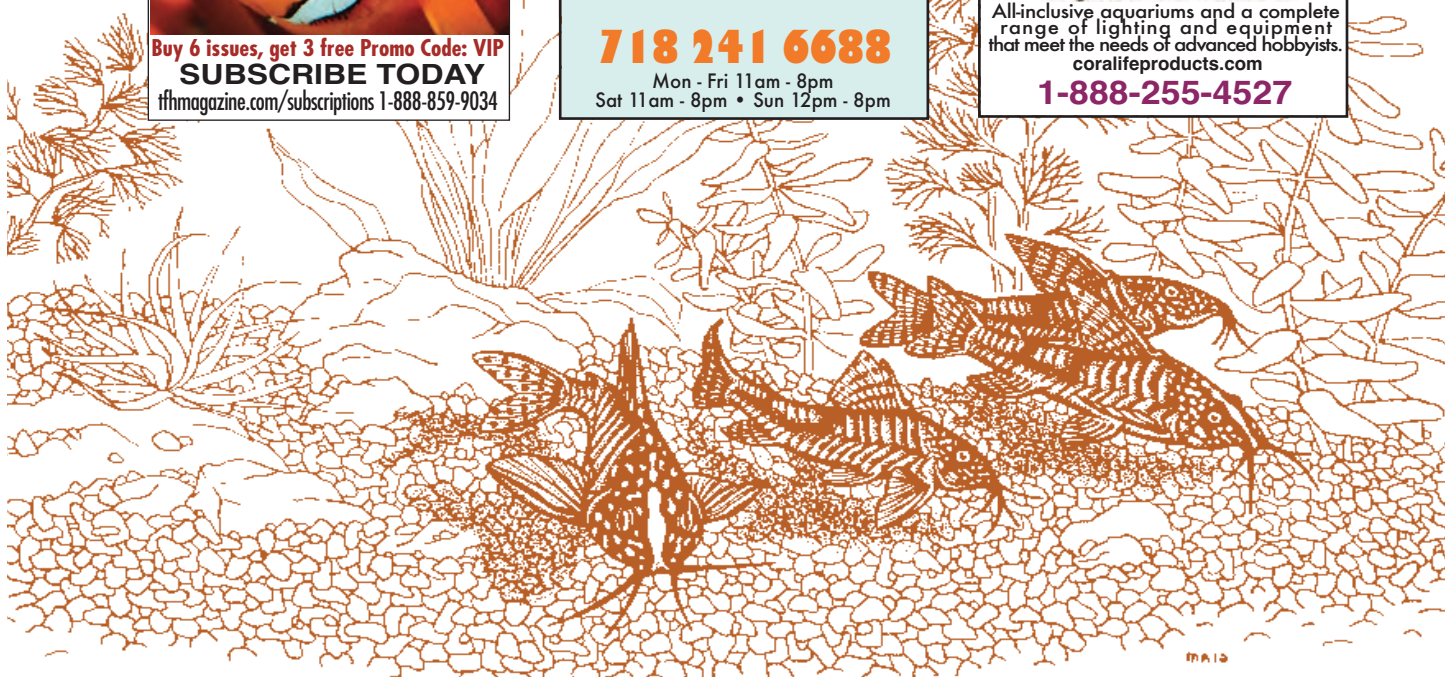


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